

# Presentation of the Helmholtz Open Science Office

Speaker

Helmholtz Association  
Helmholtz Open Science Office

Event, Date

# Content

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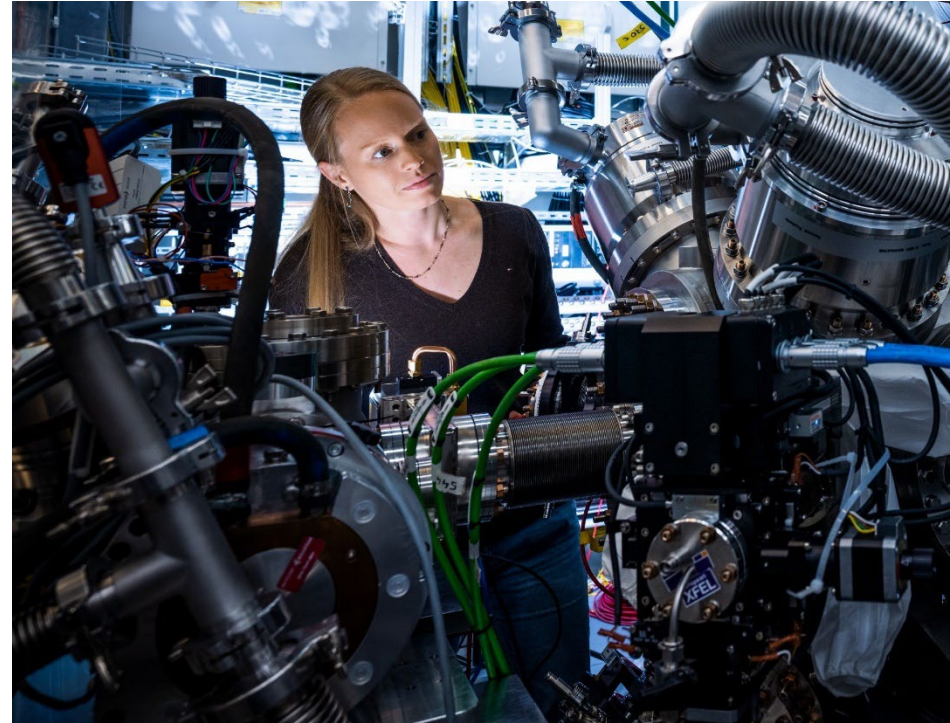
- Helmholtz Association
- Helmholtz Open Science Office
- Open Access
  - Task Group Open Access Transformation
- Open Research Data
- Open Research Software
  - Task Group Research Software
- Indicators
  - Task Group Helmholtz Quality Indicators for Data and Software Products
- National and international Network
- Projects of the Helmholtz Open Science Office
- Dialogue

Helmholtz Association

# Helmholtz Research Mission and Strategy

## Research for Grand Challenges

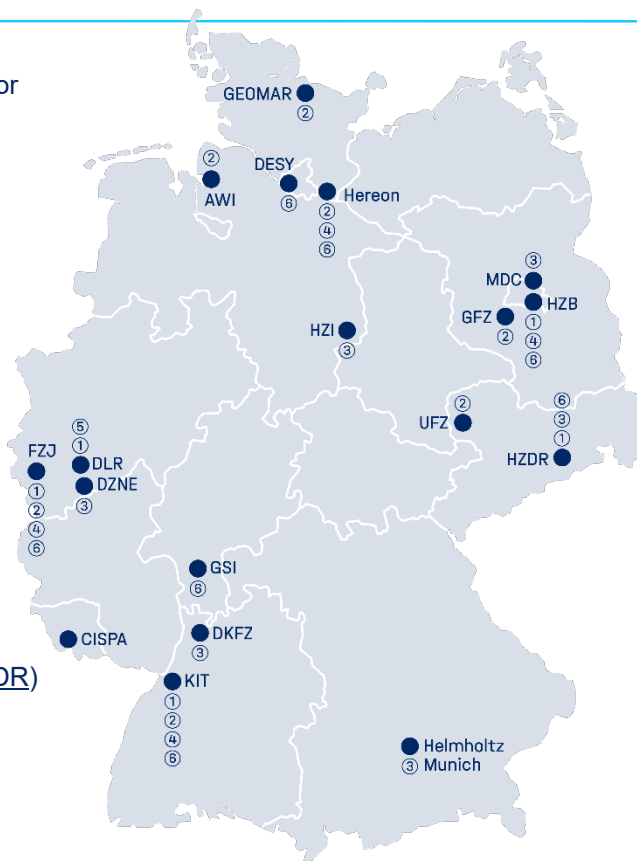
- Systems solutions for grand challenges based on:
  - Scientific excellence
  - Interdisciplinarity and critical mass
  - long term research programs
- Helmholtz provides a highly attractive environment for talents and brilliant brains
- Profound expertise in large scale research infrastructure
- Helmholtz as a prime strategic partner at the local, national and international level
- Transfer of knowledge into economy and society



# Helmholtz research centers

## 18 centers in 6 Research Fields

- Alfred Wegener Institute Helmholtz Centre for Polar and Marine Research ([AWI](#))
- [CISPA](#) – Helmholtz Center for Information Security
- Deutsches Elektronen-Synchrotron [DESY](#)
- Forschungszentrum Jülich ([FZJ](#))
- [GEOMAR](#) Helmholtz Centre for Ocean Research Kiel
- German Aerospace Center ([DLR](#))
- German Cancer Research Center ([DKFZ](#))
- German Center für Neurodegenerative Diseases ([DZNE](#))
- [GSI](#) Helmholtz Center for Heavy Ion Research
- Helmholtz Center Dresden Rossendorf ([HZDR](#))
- Helmholtz Center for Environmental Research – [UFZ](#)



- Helmholtz Center for Infection Research ([HZI](#))
- Helmholtz Center Potsdam – German Research Center for Geosciences [GFZ](#)
- [Helmholtz Munich](#)
- Helmholtz-Zentrum Berlin für Materialien und Energie ([HZB](#))
- Helmholtz-Zentrum Hereon
- Karlsruhe Institute of Technology ([KIT](#))
- Max Delbrück Center ([MDC](#))

### Research Fields:

- (1) Energy, (2) Earth and Environment
- (3) Health, (4) Information
- (5) Aeronautics, Space and Transport, (6) Matter

# The six research fields of the Helmholtz Association

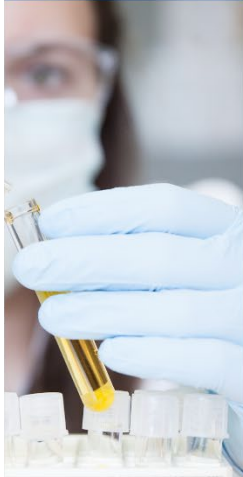
Energy



Earth and  
Environment



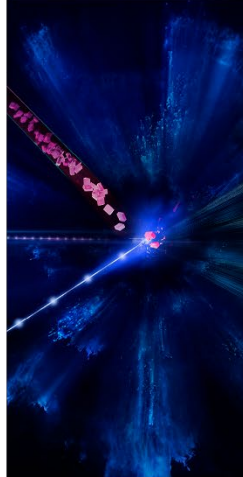
Health



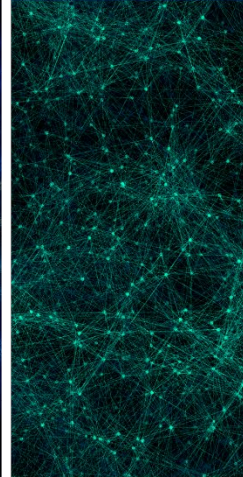
Aeronautics,  
Space  
and  
Transport



Matter



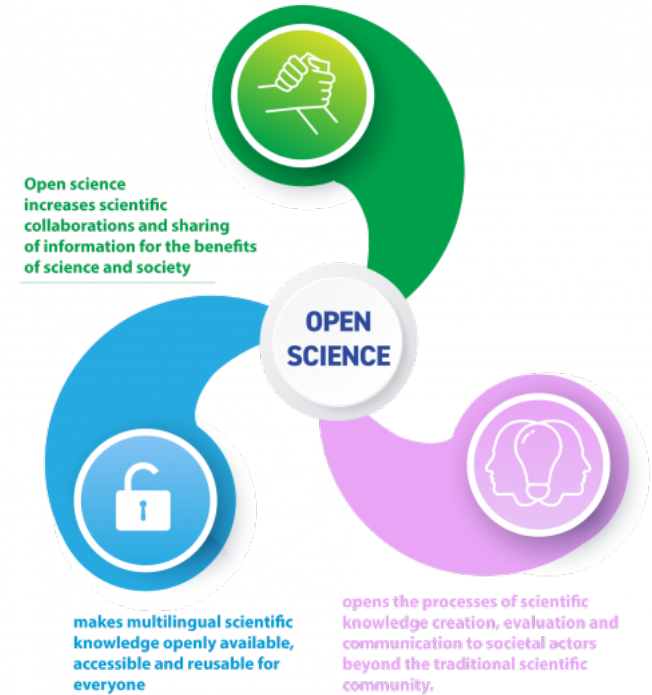
Information



Helmholtz Open Science Office

# Open Science

- Cultural change in scientific working methods, organization, and communication.
- Consistently employs digitization to make all components of the scientific process (publications, research data, research software, etc.) open, traceable, reusable, and accessible to everyone (in terms of reducing technical, legal, and financial hurdles).
- Expands transparency and the possibilities for quality assurance, increases the performance of science, and promotes innovations based on scientific findings.
- The development of open science differs in levels of extent in the research fields of the Helmholtz Association, depending on the discipline and respective publication culture.

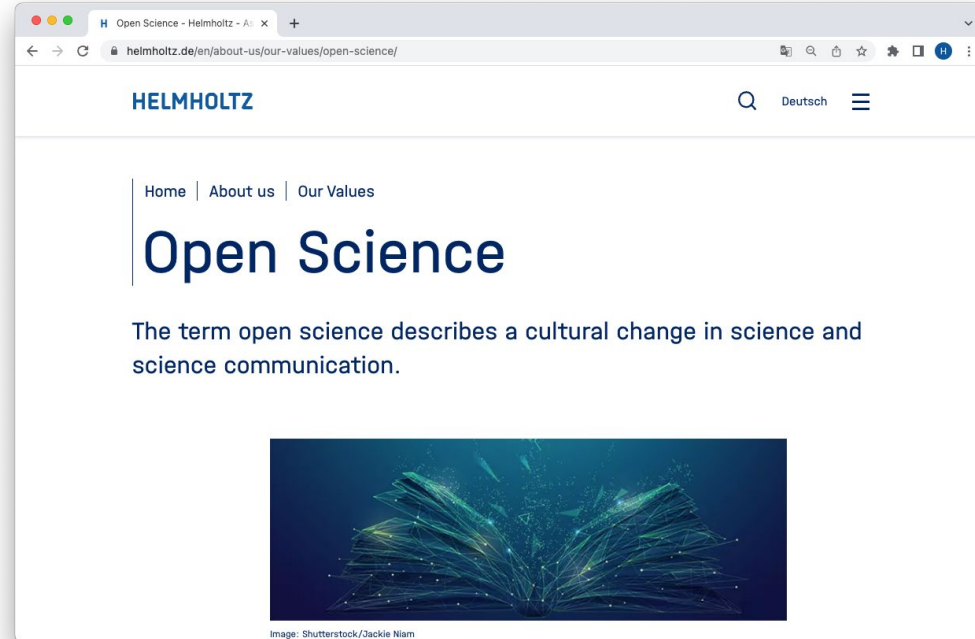


Source: [UNESCO](https://unesco.org/en/themes/science/open-science)



# Open Science in Helmholtz

- Open Science is an important cross-cutting topic with numerous points of contact
- In the Centers:
  - digitization, research infrastructures, libraries, data centers, transfer, etc.
- In the entire Association:
  - Digital transformation, KPIs, incubator platforms, Initiative and Networking Fund, transfer, etc.



<https://www.helmholtz.de>

# Helmholtz Open Science Office: Mission

## Enabling Open Science practices in Helmholtz!

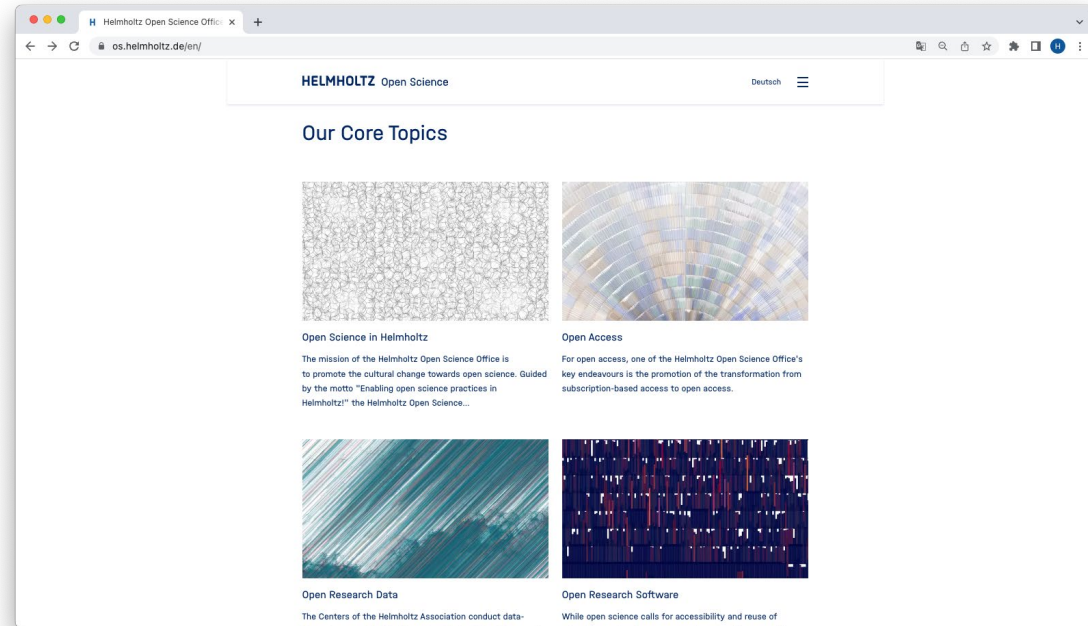
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- The Helmholtz Open Science Office
  - is a service provider for the Association for the cultural change “from closed to open”.
  - promotes dialogue and provides impulses within the Association.
  - offers training and support concerning all aspects of open science.
  - cooperates with the centers in the Open Science working group and in joint task groups
  - delivers a key contribution to the digital transformation.
  - represents Helmholtz positions on open science on a national and international level.

**HELMHOLTZ**  
**Open Science**

# Open Science in Helmholtz

- Our current core topics
  - **Open Access** - access to and re-use of textual publications
  - **Open Research Data** - access to and re-use of research data
  - **Open Research Software** - access to and re-use of research software
  - National and international **network** concerning open science

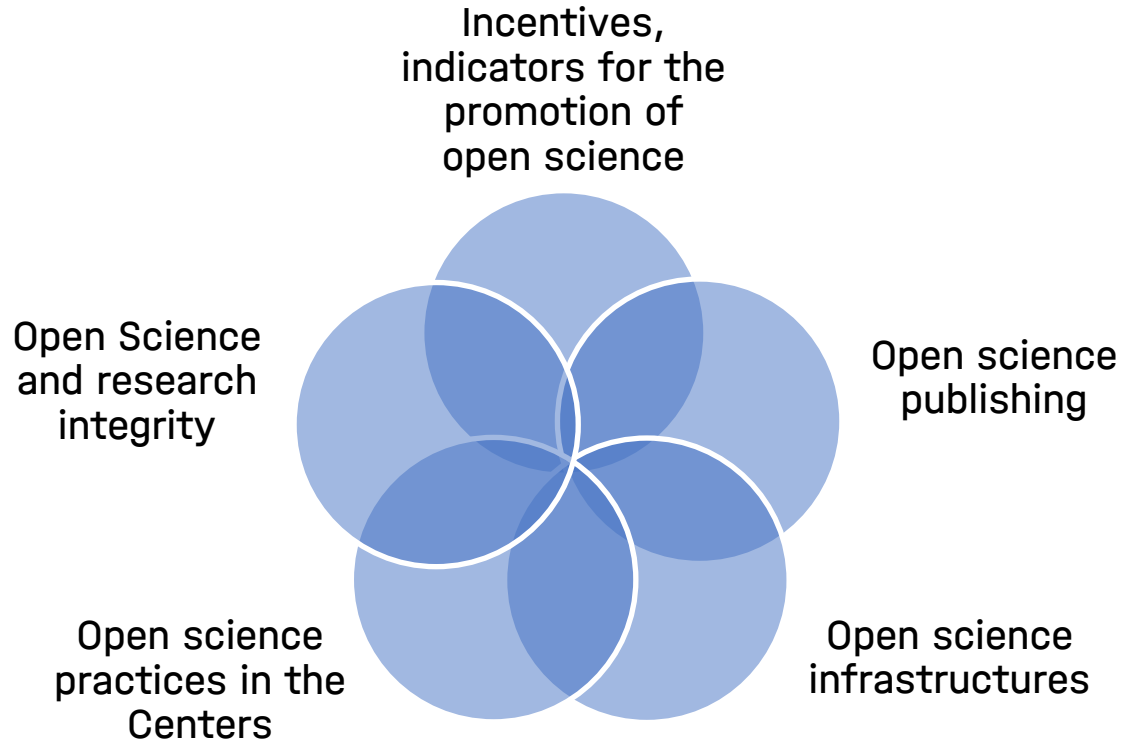


<https://os.helmholtz.de>

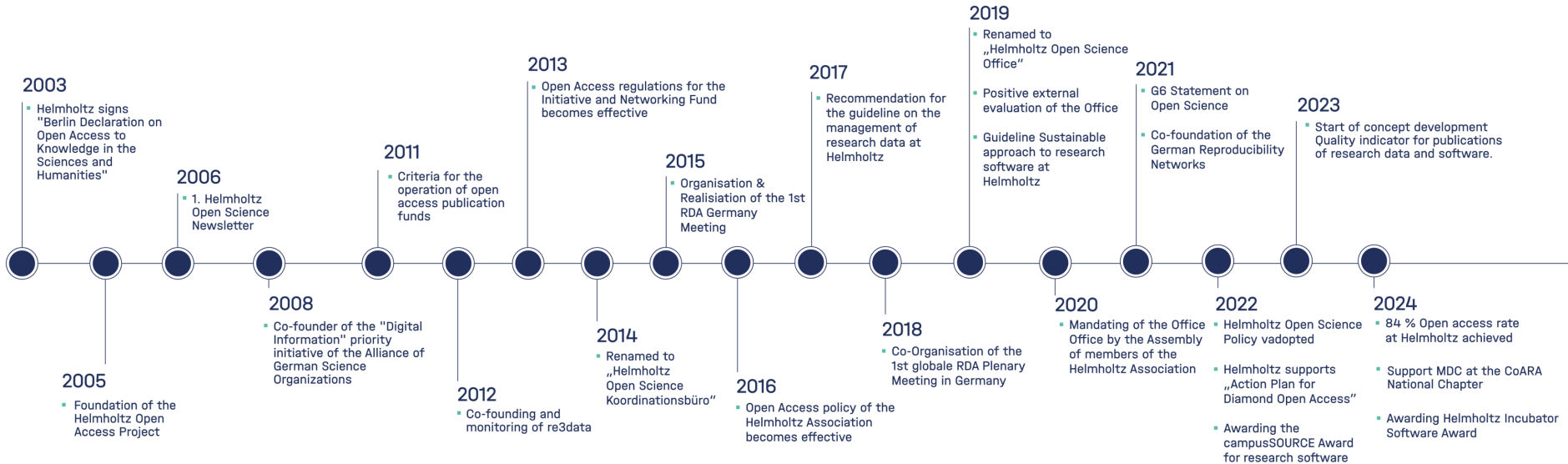
# Helmholtz Open Science Office:

## Focus topics 2024/2025

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# Milestones



# Aktuelle Themen

## Helmholtz Open Science Foren

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- As part of the Helmholtz Open Science Forums, the Helmholtz Open Science Office offers the community and the centers a platform for discussing current topics in the field of open science.
- Selection:
  - [EOSC](#)
  - [Research assessment](#)
  - [Research data management](#)
  - [Research software](#)
  - [Helmholtz in the NFDI](#)
  - [Indicators for Open Science](#)
  - [Open Science and transfer](#)
  - [Publication cost management](#)
  - [Scholar-led Publishing at Helmholtz](#)

## Current topics

# Briefing Papers and Factsheets

As part of the Helmholtz Open Science Forums, the Helmholtz Open Science Office communicates important developments in the field of open science to the community and the centers

### Selection

- Wissenschaftliches Publizieren bei Helmholtz: Status Quo, Szenarien für Scholar-led Publizieren - ein Diskussionspapier, [doi.org/10.48440/os.helmholtz.073](https://doi.org/10.48440/os.helmholtz.073)
- Helmholtz Open Science Briefing: 2nd Helmholtz Open Science Forum "Open Science and Transfer", <https://doi.org/10.48440/os.helmholtz.075>
- Helmholtz Open Science Briefing: 5th Helmholtz Open Science Forum: Research Software. Helmholtz Open Science Office. <https://doi.org/10.48440/os.helmholtz.074>
- Open Science Briefing: Recommendations for open science publications in the Helmholtz Association, <https://doi.org/10.48440/os.helmholtz.068>
- more at <https://os.helmholtz.de/publikationen>

# National and international Networking

- [Allianz der deutschen Wissenschaftsorganisation: Schwerpunktinitiative „Digitalität in der Wissenschaft“](#)
- [Confederation of Open Access Repositories \(COAR\)](#)
- [DEAL Konsortium](#)
- [Deutsche Initiative für Netzwerkinformation \(DINI\)](#)
- [European Association of Research and Technology Organisations \(EARTO\)](#)
- [German Reproducibility Network \(GRN\)](#)
- [Nationale Forschungsdateninfrastruktur \(NFDI\)](#)
- [Network G6](#)
- [PREMIER](#)
- [Research Data Alliance \(RDA\)](#)
- [Re3data Working Group](#)
- [RDA Deutschland](#)





# Project participation of the Helmholtz Open Science Office

The Helmholtz Open Science Office participates in relevant third-party funded projects.

These are currently:

- [Helmholtz Metadata Collaboration](#) (HMC) Community building
- [OA Datenpraxis](#) (DFG)
- [open-access.network](#) (BMBF)
- [PID Network Deutschland](#) (DFG)
- [PID4NFDI](#) (BASE4NFDI)
- [Transform2Open](#) (DFG)



Transform2Open

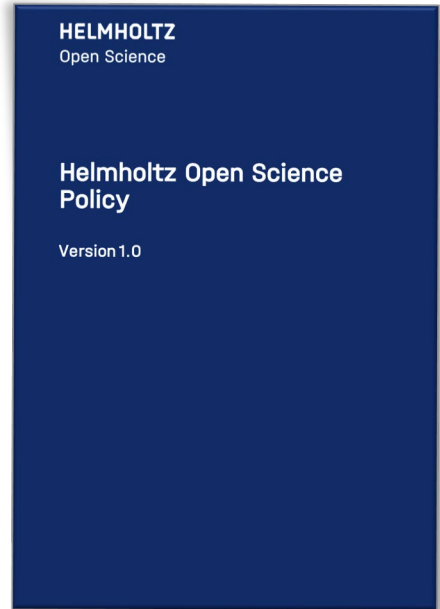
## Completed projects:

Alliance Permanent Access to the Records of Science in Europe Network ([APARSEN](#)), [DeepGreen](#), Ecosystem Data Management ([EcoDM](#)), Opportunities for Data Exchange (ODE), Options4OA, [ORCID DE](#) und [re3data](#).

# Helmholtz Open Science Policy

# Helmholtz Open Science Policy

- The Helmholtz Association's General Assembly adopted an Open Science Policy in September 2022.
- The policy stipulates that scientific articles, research data and research software are to be published openly. Open Science thus becomes the standard of publication practice.
- The Helmholtz Open Science Policy is organized into three sections:
  - In the section "A. Strategic Positioning," the Helmholtz Association formulates a commitment to open science in accordance with the principle "as open as possible and as closed as necessary."
  - In the section "B. Monitoring," Helmholtz makes a commitment to open science on the basis of the three current focus areas through specific and verifiable objectives.
  - In the section "C. Implementation and Common Requirements," in line with the funding policy of the European Commission, open science practices are formulated for implementation purposes.



<https://doi.org/10.48440/os.helmholtz.056>

# Strategic Positioning: Principles

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**Openness:** The results are published openly. Open Access under the Creative Commons license CC BY is the standard publication practice for scientific results to ensure accessibility and reuse of the results.

**Transparency:** The results are communicated transparently. Research data and research software required to evaluate the results are published openly so that they can be classified by third parties (e.g. in the context of reproducibility) at any time.

**Quality assurance:** Digital research services and open knowledge infrastructures support quality assurance. The quality of the results is ensured at every stage of the research process in line with good scientific practice.

**Networking:** The FAIR principles guide the processing of knowledge objects and resources. For example, results are addressed with standards such as metadata and persistent identifiers so that findability, accessibility, interoperability and reuse are permanently guaranteed.

**Sustainability:** Results are published on long-term, secure and trustworthy knowledge infrastructures (including science-driven publication platforms, journals and repositories).

# Strategic Positioning: Design Principles

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In order to shape Open Science on the basis of these principles, Helmholtz:

- Support researchers in implementing these principles by providing infrastructure, services, advice and training,
- Establish and expand central open science infrastructures such as publication platforms, self-publishers, repositories and advisory services and promote their networking at international level
- Ensure the financing of these digital information infrastructures for science
- taking over publication services from publishers and other service providers, subject to appropriate and transparent price and cost structures
- Promote innovative quality assurance procedures such as open peer review
- Embed open science practices in their funding and resource allocation procedures
- Recognize and value the use of open science practices in the assessment of research performance (research assessment) and create incentives for open science practices (open access, open research data, open research software, infrastructure and services)
- Promote networking with other stakeholders to support open science at national and international level.

# On the Way to Openness by Design

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At Helmholtz, the development "from closed to open" is supported and driven forward by targeted activities, services and offers. Infrastructures therefore also play a central role in this development. These infrastructures are to be understood as dynamically developing socio-technical structures.

Other fields of action that need to be considered in this context are open educational resources, open hardware and open services. With regard to digitalization in the sciences and humanities, the individual components come together to form a digital research ecosystem.

"Openness by design" should be a fundamental maxim that guides future developments.

Open Access

# Core topic

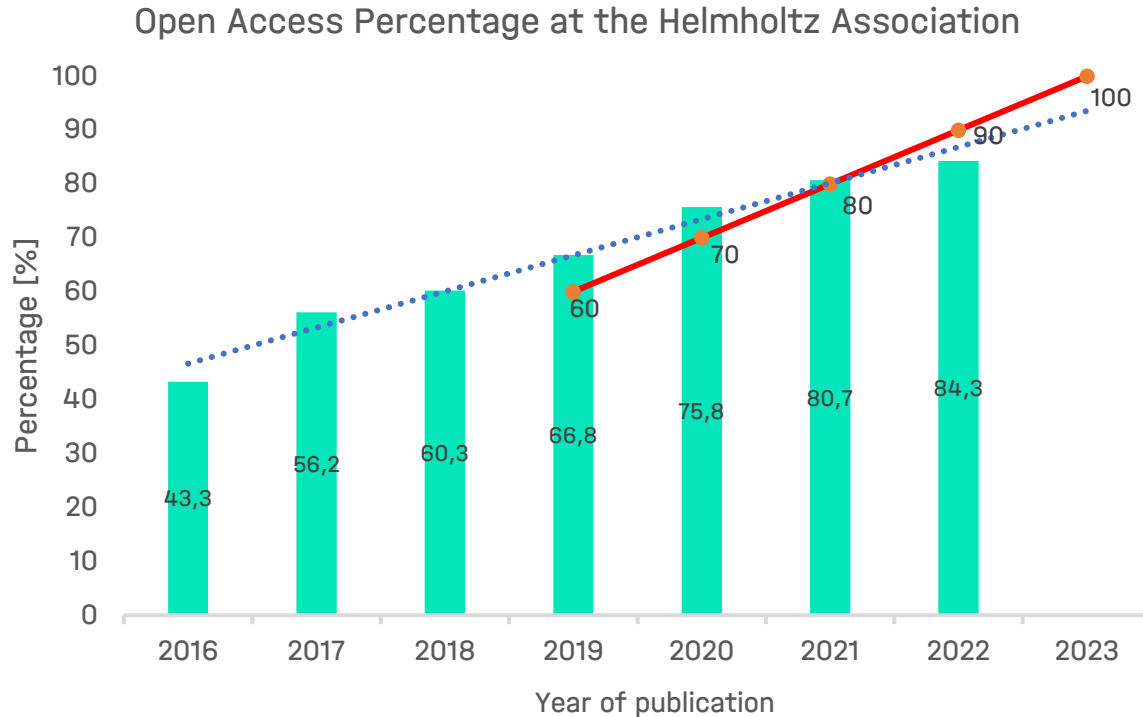
## Open Access

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- The Helmholtz Association was one of the initial signatories of the [Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities](#) in 2003.
- For open access, one of the Helmholtz Open Science Office's key endeavors is the promotion of the transformation from subscription-based access to open access.
- In 2016, and after preparation by the OS Office, the President signed the “Expression of Interest” of the international OA2020 Initiative.
- In 2016, the Assembly of Members specified the [Open Access Policy](#) in concrete terms, offering a framework of action to the Helmholtz Centers for a coordinated transformation towards open access.
- In 2022, the Helmholtz Association's General Assembly adopted the Helmholtz Open Science Policy.



# Increasing Open Access Percentage



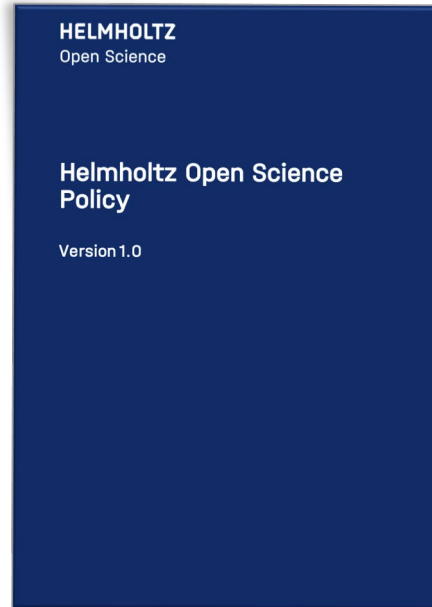
Open Access percentage of publications at the Helmholtz Association (green) with linear trend (dashed blue) and target rates (orange) for the publication years 2016 to 2023

# Helmholtz Open Science Policy

## Open Access

- „1.1 The employees shall ensure that
  - at the time of publication, at the latest, a machine-readable electronic copy of the published version or the final peer-reviewed manuscript accepted for publication is deposited in the Helmholtz Center's repository for scientific publications.
  - the deposited publication is preferably made freely accessible via the repository immediately, namely, under the latest available version of the Creative Commons Attribution International Public License (CC BY) (in the case of monographs and other long-text formats, an alternative license may be chosen),
  - but at the latest 12 months after publication, in accordance with the right of self-archiving (Section 38(4) of the German Act on Copyright and Related Rights [UrhG]).
  - they make available via the repository information on research results as well as tools and auxiliary resources that are necessary to validate the conclusions of the scientific publication.

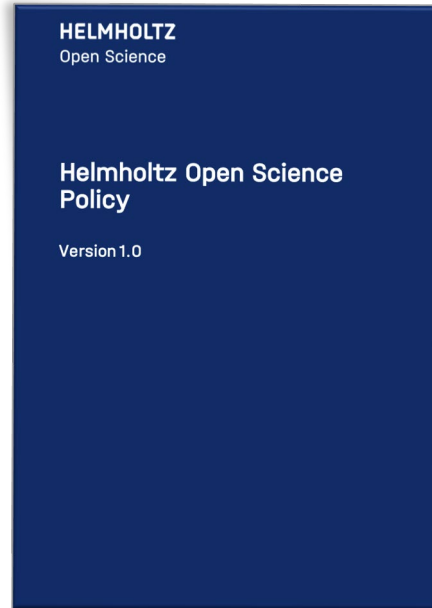
For implementation purposes, employees are encouraged to reserve sufficient rights of reuse to fulfil the open access requirements.”



# Helmholtz Open Science Policy

## Open Access

- „1.2 For implementation purposes, the Centers and their information infrastructure facilities shall ensure that
  - the metadata of the deposited publications are accessible under a Creative Commons Public Domain Dedication (CC0) license or another equivalent license; [...].
  - the information included in the metadata is identified by means of suitable persistent identifiers (e.g., DOI, ORCID iD, ROR ID, etc.).
  - the publication fees incurred for scientific publications that have undergone peer review and are genuinely open access are funded within the framework of in-house regulations. Further information on the payment of costs can be found in the “Criteria for the Operation of Open Access Publication Funds and the Payment of Open Access Publication Fees” and in the respective internal policies of the Helmholtz Centers.”



# Core topic

## Open Access

- Promotion of the transformation from subscription to open access
- Open Access Green and Open Access Gold are implemented as equal strategies

Open Access Green	Open Access Gold
<ul style="list-style-type: none"><li>• Diverse and distributed infrastructure of open access repositories</li><li>• Participation in disciplin-specific open access infrastructures (e.g., <a href="#">Inspire HEP</a>)</li><li>• Co-financing of central open access infrastructures (e.g., <a href="#">arXiv.org</a>)</li></ul>	<ul style="list-style-type: none"><li>• Framework agreements for the financing of Open Access internationally (e.g., <a href="#">SCOAP<sup>3</sup></a>)</li><li>• Framework agreements for the financing of Open Access nationally (e.g., <a href="#">DEAL consortia</a>)</li><li>• Framework agreements for the financing of Open Access in Helmholtz (opt-in contracts)</li><li>• Self-publishing activities at the Centers (e.g., <a href="#">KIT Scientific Publishing</a>)</li></ul>

- Monitoring:
  - National [Open Access Monitor](#) at Forschungszentrum Jülich
  - Monitoring at Helmholtz

## Core topic

# Open Access

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- The Helmholtz Open Science Office accompanies the transformation process in Helmholtz towards open access with:
- Organization of the Task Group [Open Access Transformation](#)
- [Events](#) on the subject of open access publishing
  - e.g. Helmholtz Open Science [Forum Scholar-Led Publishing at Helmholtz](#)
- Resources on the topic of open access publishing
  - [FAQs on the topic of “predatory publishing”](#)
  - [Criteria for the Operation of Open Access Publication Funds and the Payment of Open Access Publication Fees](#)
  - [Preprints at Helmholtz](#)
  - [Recommendations for open science publications in the Helmholtz Association](#)

# Kernthema

## Open Access

Project participations on the topic of Open Access (OA) transformation

BMBF-funded project [open-access.network](https://open-access.network)

- Numerous measures relating to OA transformation
- Inclusive information, training and networking opportunities
- Open-Access-Helpdesk

DFG-funded projects:

[Transform2Open](https://transform2open.de)

- Addresses the financial dimensions of the OA transition
- Includes information budget, workflows and responsibilities

[OA-Datenpraxis](https://oa-datenpraxis.de)

- Supporting the development of structures for OA transformation at scientific institutions in Germany
- Promotion and establishment of processes and procedures for sovereign data practice



Transform2Open



## Core topic

# Open Access Transformation

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- Joint Task Group of the Working Group Open Science and the Working Group Library and Information Management to promote the open access transformation in the Helmholtz Association, moderated by the Helmholtz Open Science Office
- The [Task Group](#), among other aspects, works on the following elements of the open access transformation:
  - Incentives and metrics
  - Guidelines and policies
  - Cultural change towards open access
  - Sovereignty of scientific communication through Scholar-Led Publishing

# Open Research Data



## Core topic

# Open Research Data

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- The Helmholtz Association is leading in generating, managing and providing access to [research data](#).
- In 2016, the Helmholtz Association adopted a [position paper](#) with the title [Making information resources more usable](#) on the handling of research data.
- In 2017, the Helmholtz Association adopted the [Recommendations for guidelines of the Helmholtz centers for handling research data](#) which guides the Centers in the formulation of their respective [Research Data Policies](#).
- The Helmholtz Open Science Office promotes the [coordination of the Centers](#) and supports them in [developing policies and related practices](#) in handling digital research data; esp. concerning the utilization of the [FAIR principles](#) in Helmholtz.
- In 2022, the Helmholtz Association's General Assembly adopted the [Helmholtz Open Science Policy](#).
- In May 2024, [16 out of 18 centers](#) have their own research data policy.
- The work of the Helmholtz Open Science Office thus complements the developments of platforms in the [Helmholtz Incubator](#).

## Position paper

# “Making information resources more usable!”

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- Position paper [Making information resources more usable!](#) (2016):
  - foster focused research in the field of information technology and pursue the development and operation of corresponding information infrastructures;
  - store research data from the Centres within suitable data infrastructures and make them available openly and free of charge for subsequent use by science and society;
  - play an active part in national and international initiatives to coordinate the establishment of the necessary infrastructures; and
  - education and training in research data management
- These principles are intended to promote the quality, productivity, sustainability and competitiveness of science, in keeping with the mission of the Helmholtz Association. They also provide a basis for knowledge transfer.

# Helmholtz Open Science Policy

## Open Research Data

- „2.1 In addition, the employees shall ensure that the following aspects are adhered to:
  - The digital research data that they generate shall be managed responsibly and in accordance with the FAIR Principles.
  - Especially in the case of EU-funded research projects, the employees shall use the data management plan (DMP) tool, and, in doing so, take into account [...]
    - the deposit of research data as early as possible and within the time limits specified in the DMP in a trustworthy repository that is indexed in re3data [...]
    - the principle “as open as possible, as closed as necessary,” unless the provision of open access would, in particular:
      - prejudice the legitimate interests of the funding recipients, also with regard to commercial exploitation, or
      - be contrary to other constraints. [...]”

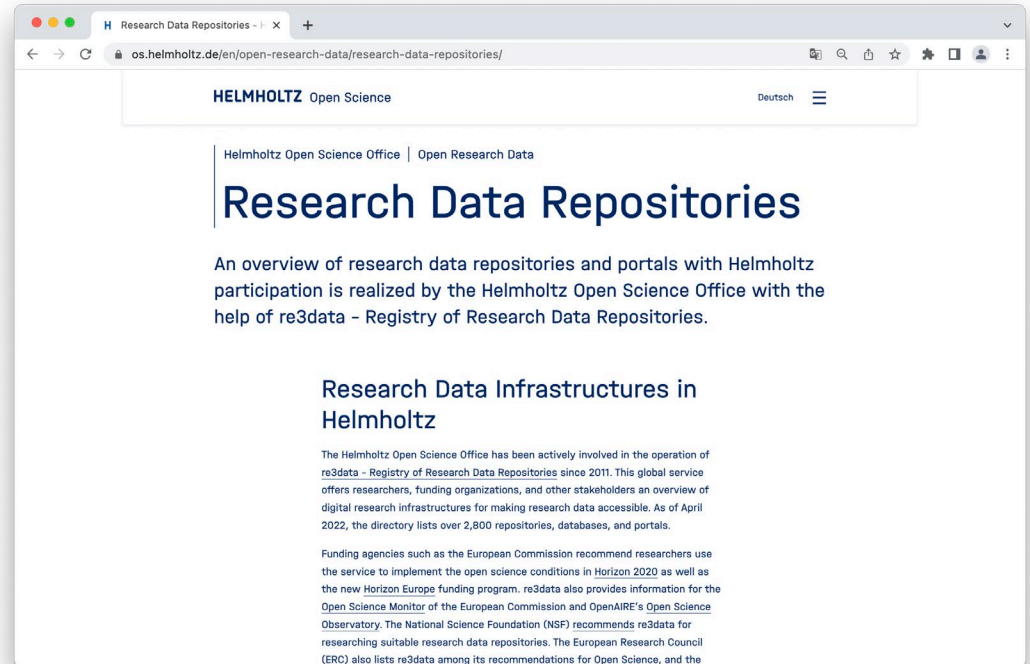
HELMHOLTZ  
Open Science

Helmholtz Open Science  
Policy

Version 1.0

# Research Data Repositories and Portals in Helmholtz

- The Helmholtz Centers operate about 100 data infrastructures in the Association in which unique and valuable digital research data is curated.
- An overview offers [re3data](https://re3data.org) - Registry of Research Data Repositories



<https://os.helmholtz.de/en/open-research-data/research-data-repositories>

# Open Research Data

## NFDI Participation

- Numerous consortia of the **National Research Data Infrastructure (NFDI)** are being implemented with substantial Helmholtz participation.
- All Helmholtz Centers are members of the NFDI.

### Participation of the Helmholtz Centers in the National Research Data Infrastructure (NFDI)



● All Helmholtz Centers are members of the National Research Data Infrastructure (NFDI) association

# Open Research Data

## NFDI Participation

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- Helmholtz Centers are involved in the following NFDI consortia (status 2024):
  - [Base4NFDI](#): Basic services for the NFDI
  - [DAPHNE4NFDI](#) (DESY, FZJ, HZB, HZDR, HEREON, KIT)
  - [DataPLANT](#) (FZJ)
  - [FAIRagro](#) (FZJ, UFZ)
  - [FAIRmat](#) (FZJ, HZB, HZDR, KIT)
  - [GHGA](#) (CISPA, DKFZ, DZNE, HMGU, HZI, MDC)
  - [NFDI4BioDiversity](#) (AWI, UFZ)
  - [NFDI4BIOIMAGE](#) (DKFZ, FZJ, UFZ)
  - [NFDI4Cat](#) (KIT)
  - [NFDI4Chem](#) (KIT, UFZ)
  - [NFDI4DataScience](#) (AWI)
  - [NFDI4Earth](#) (AWI, DLR, FZJ, GEOMAR, GFZ, HEREON, KIT, UFZ)
  - [NFDI4Energy](#) (GFZ/RIFS, KIT)
  - [NFDI4Health](#) (MDC)
  - [NFDI4Immuno](#) (DKFZ, HZI)
  - [NFDI4Ing](#) (FZJ, DLR, KIT)
  - [NFDI4Microbiota](#) (DLR, FZJ, GFZ, HMGU, HZI, MDC, UFZ)
  - [NFDI-MatWerk](#) (FZJ, HEREON, KIT)
  - [NFDI4Objects](#) (UFZ)
  - [NFDIxCS](#) (KIT, FZJ)
  - [PUNCH4NFDI](#) (DESY, DLR, FZJ, GSI, HZDR, KIT)
  - [Text+](#) (FZJ)

# Open Research Data

## EOSC-Beteiligungen

- The [European Open Science Cloud \(EOSC\)](#) has been started in 2015 as a project of the European Commission to make it easier for European researchers to access scientific data, platforms, and services for data processing.
- Participation of Helmholtz Centers in 10 ongoing EOSC projects (as of April 2024):

[AI4EOSC](#): KIT

[AquaINFRA](#): Hereon u. KIT

[Blue-Cloud 2026](#): AWI

[EOSC4CANCER](#): DKFZ

[EOSC-Beyond](#): DESY, FZJ u. KIT

[EVERSE](#): HZDR

[FAIR-EASE](#): AWI

[FAIR-IMPACT](#): KIT

[O.S.C.A.R.S](#): DESY u. FZJ

[Skills4EOSC](#): KIT



# Task Group

## for the Implementation of Research Data Policies

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- The [Task Group](#) was founded to create the [Recommendations for guidelines of the Helmholtz centers for handling research data](#).
- The current focus is on **monitoring** the status of the implementation of Research Data Policies by the Centers:
  - Monitoring the status of implementation of the research data policy in the centers: **16 centers** have already developed their [own guidelines](#) for handling digital research data. (Status: May 2024)
  - Since 2020, the Helmholtz Open Science Office, together with the Task Group, annually presents an **internal report** on the handling of research data and the status of the development or implementation of research data policies at the Helmholtz Centers.
  - 2023 Task Group completed



Open Research Software

## Core topic

# Open Research Software

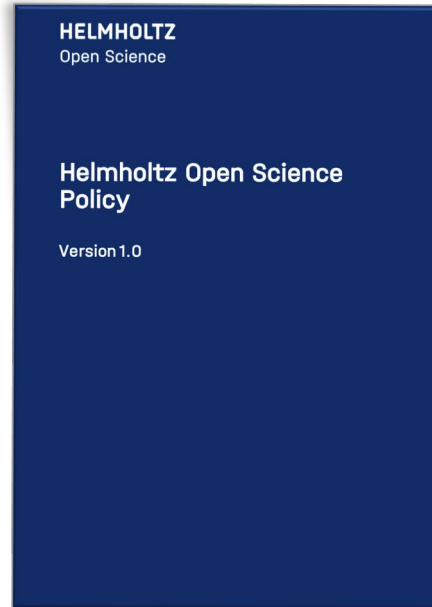
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- The topic of Open Research Software continues to gain importance; while open science calls for **reuse** and **reproducibility** of scientific results, in many research areas, this can only be ensured if **source code** is made openly accessible in addition to the corresponding research data.
- At the Helmholtz Centers, various research software initiatives are currently being implemented.
- Works:
  - 2017: position paper [Access to and re-use of research software](#)
  - 2019: [Model Policy on Sustainable Software at the Helmholtz Centers](#)
  - 2021: [Checklist for the Implementation of Software Policies at the Helmholtz Centers](#) (German only)
  - 2022: [Helmholtz Open Science Policy](#) & Beteiligung am [campusSOURCE Award 2022](#) für Forschungssoftware
  - 2023: [Helmholtz Research Software Directory](#) & [Helmholtz Incubator Software Award](#)

# Helmholtz Open Science Policy

## Open Research Software

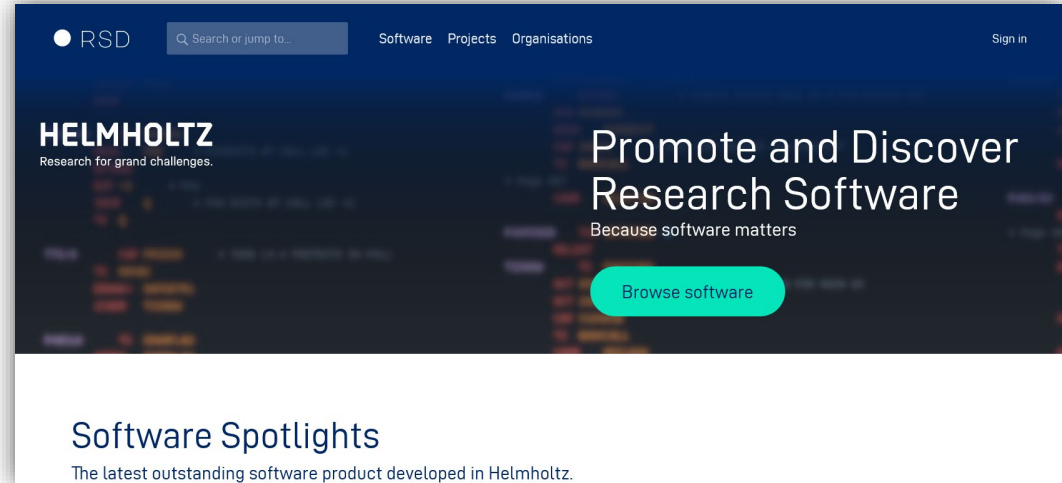
- „3.1 The employees shall ensure that
  - wherever possible, the program code that is necessary for reusing and/or validating the published data is made openly accessible in a repository.
- 3.2 For implementation purposes, the Centers and their information infrastructure facilities shall ensure that
  - researchers are supported in publishing research software;
  - the metadata of the deposited software/the deposited code are published under a Creative Commons Public Domain Dedication License (CC0) or an equivalent license (insofar as legitimate interests or constraints are respected) and in accordance with the FAIR Principles (especially machine-readability), and that they include at least information about the following: program code (description, date of deposit, version, authors, repository); name, acronym, and number of the funding project; licensing conditions; persistent identifiers and, if possible, organizations and funding. If applicable, the metadata must also include persistent identifiers for related publications and other research results.“



# Task Group

## Forschungssoftware

- Close cooperation with HIFIS, [Helmholtz Research Software Directory](#)
- Current project: [Helmholtz Incubator Research Software Award](#)
- Regular fora on [Research Software Policies](#)
- Various links to the work of [de-RSE](#)



# Indicators

# Core topic

## Indicators

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- The goal is to develop incentives and indicators to promote open science at Helmholtz.
- The ongoing discussion process to anchor open science in the process of **research evaluation** at Helmholtz needs to be further accompanied in order to develop indicators and incentives for open science in the areas of open access, open research data, and open research software.
- In this context, European and international developments in research assessment are considered and continued; see also [G6 and Open Science Statement](#)

## Indikatorik und Forschungsbewertung

- The San Francisco Declaration on Research Assessment (DORA) deals with the reform of research assessment and contains recommendations for funders, organizations and individuals.
  - Helmholtz signatories: FZJ, KIT, MDC
- Reforming the practice of research assessment in the Coalition for Advancing Research Assessment (CoARA)
  - Recognizing diverse outcomes, practices, and activities in the assessment of research, researchers, and research institutions
  - Max Delbrück Center (MDC): CoARA membership and participation in the CoARA National Chapter
  - The OS Office supports the MDC in fulfilling this mission.



## Task Group

# Helmholtz Quality Indicators for Data and Software Products

- The [Task Group Helmholtz Quality Indicators for Data and Software Products](https://doi.org/10.2312/os.helmholtz.014) of the Working Group Open Science of the Helmholtz Association is dedicated to the development of Helmholtz Quality Indicators for Data and Software Products.
- Duration: From March 2022 onwards.
- Relevant products and events:
  - (in German) Diskussionspapier „Indikatoren für Open Science“: <https://doi.org/10.2312/os.helmholtz.014>
  - (in German) Report des Helmholtz Open Science Forum zu „Indikatoren für Open Science“: <https://doi.org/10.48440/os.helmholtz.024>
  - Report Helmholtz Open Science Forum „Research Evaluation, Reputation Systems, and Openness“: <https://doi.org/10.48440/os.helmholtz.065>
  - Discussion paper: Towards a Quality Indicator for Research Data publications and Research Software publications -- A vision from the Helmholtz Association: <https://doi.org/10.48550/arXiv.2401.08804>



# National and International Network

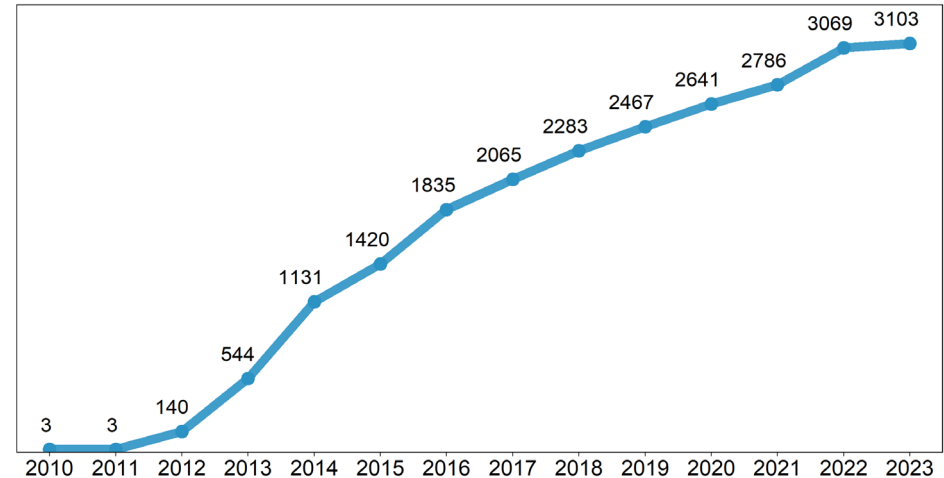
# National and international Networking

- [Allianz der deutschen Wissenschaftsorganisation: Schwerpunktinitiative „Digitalität in der Wissenschaft“](#)
- [Confederation of Open Access Repositories \(COAR\)](#)
- [DEAL Konsortium](#)
- [Deutsche Initiative für Netzwerkinformation \(DINI\)](#)
- [European Association of Research and Technology Organisations \(EARTO\)](#)
- [German Reproducibility Network \(GRN\)](#)
- [Nationalen Forschungsdateninfrastruktur \(NFDI\)](#)
- [Network G6](#)
- [PREMIER](#)
- [Research Data Alliance \(RDA\)](#)
- [Re3data Working Group](#)
- [RDA Deutschland](#)



# re3data Working Group

- re3data is an internationally recognized verification tool for research data repositories.
- The Helmholtz Open Science Office is a co-founder of the service.
- re3data serves as a central reference for research data repositories to connect them with other services and infrastructures.
- In May 2024, re3data lists over 3200 research data repositories.
  - Around 100 of them with Helmholtz participation, see here
- In 2022, re3data celebrated its 10th anniversary!



Number of research data repositories listed in re3data per year

# HMC-Collaboration

## Community Building for research data repositories at Helmholtz

The [Helmholtz Metadata Collaboration \(HMC\)](#) and the Helmholtz Open Science Office launched a joint initiative to promote [research data repositories](#) at Helmholtz at the end of 2022.

Goals:

- Establishment of a [networked community](#) at Helmholtz
- Establishment, dissemination and implementation of [best practices](#)
- Improve the [visibility of Helmholtz infrastructures](#) at national and international level



# Priority Initiative "Digital Information"

- From 2023, continuation of the cooperation of the Alliance of German Science Organizations with a [focus](#) on "Digitality in Science".
- The guiding principle of the cooperation is: [Shaping digitality - promoting openness and sovereignty](#)
- 2008 - 2022 Helmholtz cooperates with other research institutions as part of the [Alliance of German Science Organizations](#) in the [priority initiative "Digital Information"](#).



# Network G6

- The six European research organizations CNR (Italy), CNRS (France), CSIC (Spain), the Helmholtz Association, the Max Planck Society and the Leibniz Association draw up joint statements on current scientific and research policy issues under the name "G6".
- Within this framework, the Open Science Task Force of the G6 has developed a [statement on the common understanding of open science](https://os.helmholtz.de).



# Research Data Alliance (RDA)

- The Helmholtz Open Science Office has been co-organizing the [RDA-DE](#) conference since 2016. Thereby the work of the international [Research Data Alliance](#) (RDA) is promoted in Germany and the networking of actors in the field of research data management at the national level is supported.
- Helmholtz is an organisational member of the RDA.
- In 2018, the 11th [RDA Plenary](#) Meeting in Berlin with over 660 participants from 41 countries was co-organized by the Helmholtz Open Science Office.



Participants of the 11th Research Data Alliance plenary (photo: D. Rodriguez for the GFZ)

# Projects of the Helmholtz Open Science Office



# Project participation of the Helmholtz Open Science Office

The Helmholtz Open Science Office participates in relevant third-party funded projects.

These are currently:

- [Helmholtz Metadata Collaboration](#) (HMC) Community building
- [OA Datenpraxis](#) (DFG)
- [open-access.network](#) (BMBF)
- [PID Network Deutschland](#) (DFG)
- [PID4NFDI](#) (BASE4NFDI)
- [Transform2Open](#) (DFG)



Transform2Open

## Completed projects:

Alliance Permanent Access to the Records of Science in Europe Network ([APARSEN](#)), [DeepGreen](#), Ecosystem Data Management ([EcoDM](#)), Opportunities for Data Exchange (ODE), Options4OA, [ORCID DE](#) und [re3data](#).

# DFG Project

## OA Datenpraxis



- Title: OA Datenpraxis
- Project partners: Humboldt-University of Berlin  
Göttingen State and Regional Library of Lower Saxony
- Grant period: 02/2024 bis 02/2026
- Project website: <https://oa-datenpraxis.de/>  
<https://os.helmholtz.de/aktuelles/projekte/oa-datenpraxis/>
- Contact persons: Heinz Pampel & Lea Maria Ferguson

Supporting the formation of structures for the open access transformation at scientific institutions in Germany

Promotion and establishment of processes and procedures for sovereign data practice



With a view to the **Open Access transformation** at scientific institutions in Germany the project pursues the following **goals**:

- Improvement of data-based governance
- Strengthening of collaborations
- Development of standards for collaborative data practice
- Minimizing dependencies on commercial data sources
- Improvement of information provision

The focus is on **promoting and establishing** processes and procedures for **sovereign data practice** in shaping the open access transformation.

# Basic Services for NFDI

## PID4NFDI



- Title: Persistent Identifier Services for the German National Research Data Infrastructure – PID4NFDI
- Project partner: DataCite  
Gesellschaft für wissenschaftliche Datenverarbeitung Göttingen (GWDG)  
Technical Information Library (TIB) Hannover
- Grant period  
initial phase: 01/2024 to 12/2024
- More information: <https://base4nfdi.de/projects/pid4nfdi>
- Contact persons: Marc Lange & Steffi Genderjahn

- PID4NFDI will initially be funded in the initialization phase as part of [Base4NFDI](#).
- Objective: Establishment of a basic service to support the NFDI consortia in the application, use and implementation of [persistent identifiers](#) (PIDs)
- Main areas of work:
  - [Analysis](#) of the NFDI PID landscape and the [needs](#) of the NFDI consortia
  - Identification of necessary [technical measures](#) and metadata processes to improve the user-friendliness and integration of PID systems within the NFDI
  - Development of [training concepts](#) and instructions for the use and application of PIDs within the NFDI
  - [Documentation](#) and evaluation of relevant governance, business and licensing models of the various [PID providers](#)
  - Public relations and [networking](#) activities
- Close cooperation between PID4NFDI and the PID Network Germany

- Title: open-access.network
- Projekt partners: Communication, Information and Media Center (KIM) of the University of Konstanz  
Open Access Office Berlin at Freie Universität Berlin  
Technical Information Library (TIB) Hannover  
University Library Bielefeld  
Göttingen State and University Library of Lower Saxony
- Grant period: 12/2019 to 12/2025
- Information: <https://open-access.network>  
<https://os.helmholtz.de/aktuelles/projekte/open-accessnetwork>
- Contact persons: Christoph Bruch & Paul Schultze-Motel

In 2022, the project was evaluated in detail on behalf of the BMBF:

The [evaluation report](#) recommended follow-up funding.

Participation of the Helmholtz Open Science Office in six work packages:

- Editorial expansion and consolidation of content ([web editing](#))
- New approaches to [Open Access funding](#) (workshops and handouts)
- [Helpdesk](#) (consulting services)
- Services for [small institutions and departmental research](#) (workshops and report)
- Specialist services [in cooperation with learned societies](#) (workshops and handout)
- [oa.atlas](#) (data collection, data maintenance and reporting)

# DFG Project

## PID Network Deutschland



- Title: PID Network Deutschland –  
Netzwerk für die Förderung von persistenten Identifikatoren in Wissenschaft und Kultur
- Project partners: DataCite  
German National Library  
Technical Information Library (TIB) Hannover  
University Library Bielefeld
- Grant period: 03/2023 bis 03/2026
- Informations: <https://www.pid-network.de>  
<https://os.helmholtz.de/aktuelles/projekte/pid-network-deutschland>
- Contact persons: Steffi Genderjahn & Marc Lange



- Objective: Establishment of a network of existing and new actors in science and culture to promote and consolidate the application, implementation, standardization and international networking of PID systems at local, national and international level and development of a national PID roadmap.
- Project proposal: <https://doi.org/10.48440/os.helmholtz.059>



The 10 PID application areas on which the project will focus.

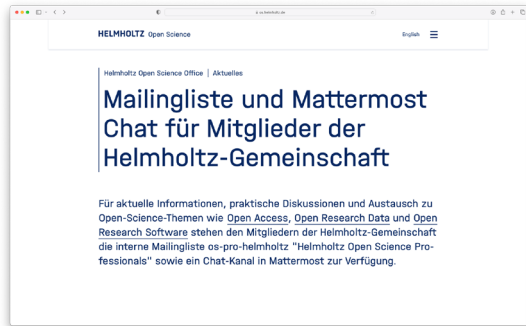
- Title: Transform2Open
- Project partners: Research Center Jülich, Central Library  
University of Potsdam, University Library
- Grant period: 01/2023 to 01/2026
- Informations: <https://www.transform2open.de>  
<https://os.helmholtz.de/aktuelles/projekte/transform2open>
- Contact persons: Lea Maria Ferguson & Marcel Meistring

- The **aims** of Transform2Open are
  - Development **of strategies, concepts and measures** for shaping the **open access transformation**
  - Further development of budgets, criteria, competencies and associated processes with regard to the **financial aspects** of the open access transformation
- The **target group** for the results of Transform2Open are **universities and non-university research institutions**
- The project organizes **dialogue forums and workshops** with various target groups and ensures interaction with other projects and activities in the field of open access transformation (e.g. open-access.network, openCost, information budget focus group, open access data practice)
- Social Media:
  - Mastodon: <https://openbiblio.social/@Transform2Open>

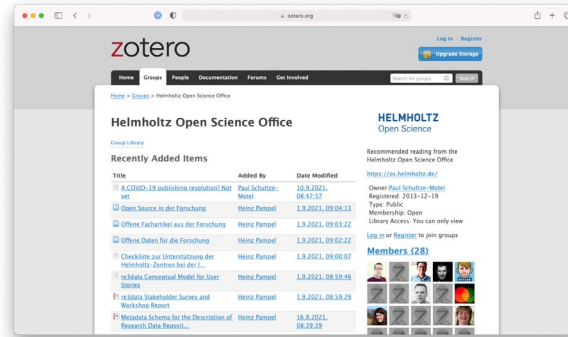


Dialogue

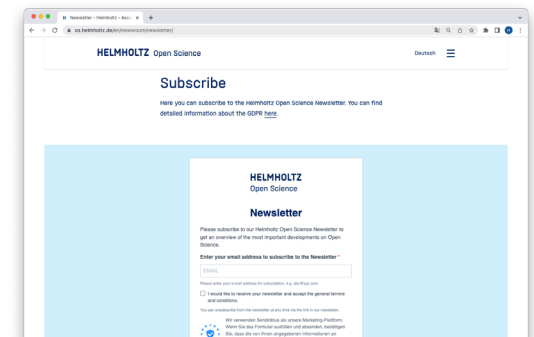
# Stay up to date



[Mailingliste und Mattermost](#)

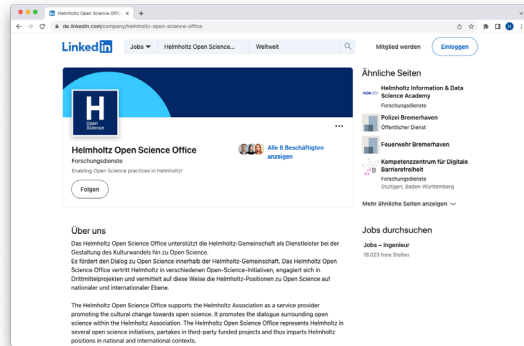


[Zotero](#)

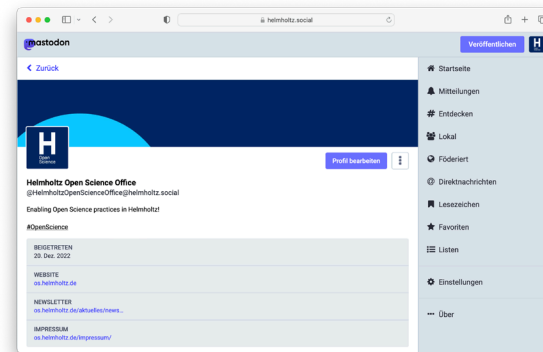


[Newsletter](#)

# Social Media



[LinkedIn](#)



[Mastodon](#)

# Team

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- Mathijs Vleugel (Head)
- Christoph Bruch
- Lea Maria Ferguson
- Steffi Genderjahn
- Marc Lange
- Marcel Meistring
- Heinz Pampel
- Johannes Schneider
- Antonia C. Schrader
- Paul Schultze-Motel

# HELMHOLTZ

## Open Science

<https://os.helmholtz.de/ueber-uns>

### Keep in touch



[open-science@helmholtz.de](mailto:open-science@helmholtz.de)



<https://os.helmholtz.de>



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Publications and recommended readings: [Zotero](#)

Mailing list for members of Helmholtz - [Helmholtz Open Science Professionals](#)





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