



# Implementing Open Science for the Helmholtz Association

HIDA Annual Conference, November 30, 2021

**Helmholtz Open Science Office**

Lea Maria Ferguson, Antonia C. Schrader, Nina Weisweiler

# What brings us here today

- It all started with **Open Access**, thus the idea that scientific publications should be “publicly accessible for sharing with science, industry and society without any barriers.” <https://os.helmholtz.de/en>
- Soon, though, it became clear that there are many more aspects of science that can benefit from openness.
- The **cultural change towards Open Science** entails many different disciplines, services, media and types of access – some of which are depicted on the right:



Open Science facets as a beehive. Made available under: [CC BY 4.0 International](https://creativecommons.org/licenses/by/4.0/).

# Open Science

- “Open Science, the **unrestricted access to scientific publications and cultural heritage**, is an ongoing and future trend in the scientific landscape worldwide.”  
[Helmholtz Open Science Office](#)
- “**Open Science** (...) make[s] multilingual scientific knowledge openly available, accessible and reusable for everyone, increase[s] scientific collaborations and sharing of information (...), and open[s] the processes of scientific knowledge creation (...) to societal actors beyond the traditional scientific community.”  
[UNESCO Recommendation on Open Science](#)
- **Key aspects** of Open Science
  - Open Access
  - Open Research Data
  - Open Research Software

# Advantages

- There are manifold advantages resulting from Open Science, and some of the main benefits include:
- Important: Openness as “intelligent openness”, i.e., “as open as possible and as closed as necessary”.



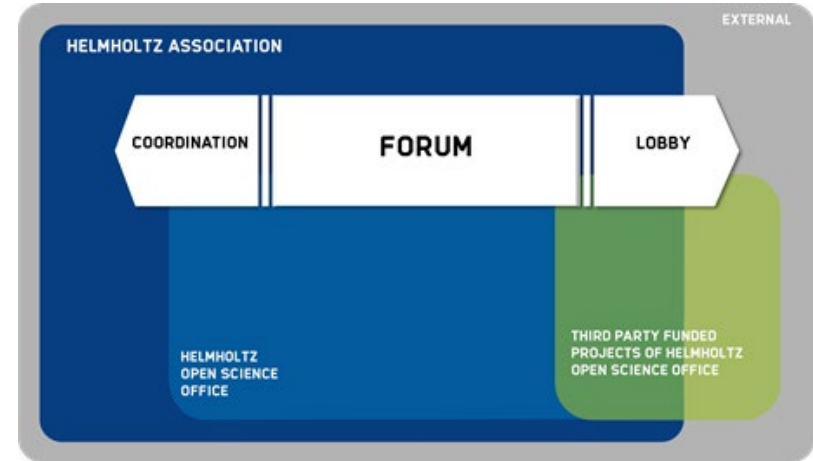
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# Open Science in the Helmholtz Association

- 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**.
- Open Science is an important **cross-cutting topic** with numerous points of contact
  - in the Helmholtz Centers:
    - e. g., Digitization, Research Infrastructures, Libraries, and Data Centers
  - in the entire Association:
    - e. g., Digitization Strategy, KPIs, Incubator Platforms, Initiative and Networking Fund, Transfer

# The Helmholtz Open Science Office

- Our Mission: Enabling Open Science practices in Helmholtz!
- 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.
  - delivers a key contribution to the Helmholtz Digitization Strategy.
  - represents Helmholtz positions on open science on a national and international level.



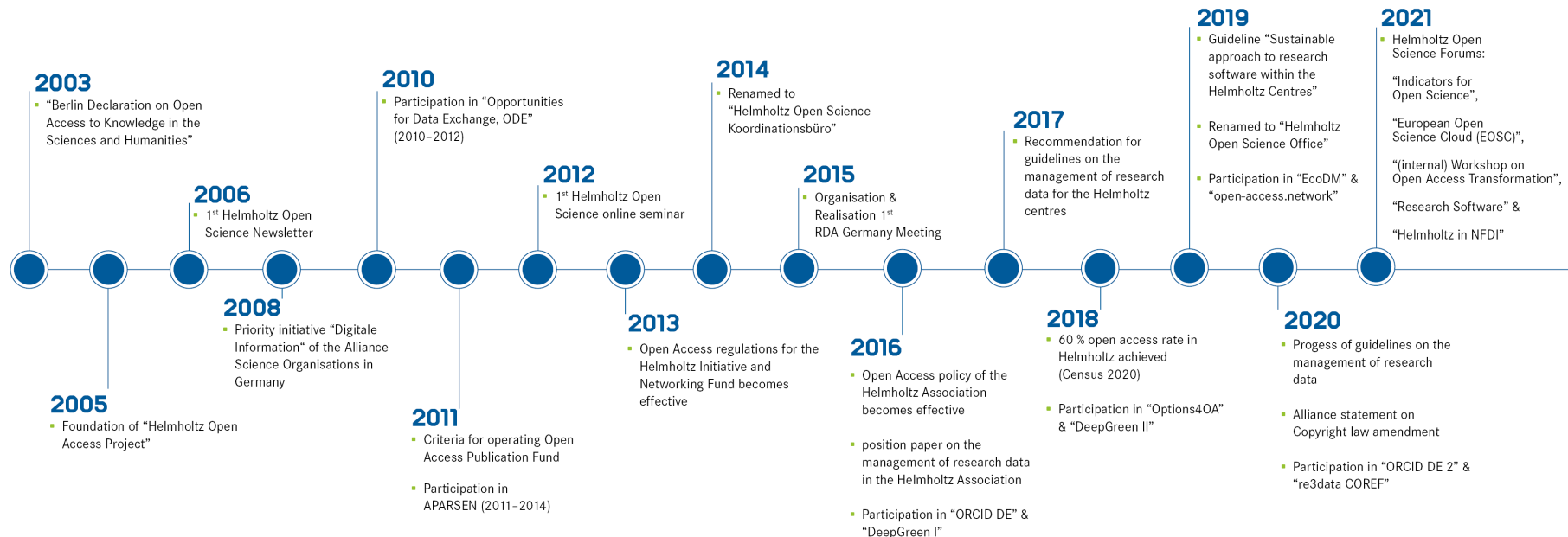
# Team

- Roland Bertelmann (Head)
- Dr. Christoph Bruch
- Lea Maria Ferguson
- Dr. Heinz Pampel (Assistant Head)
- Dr. Janina Richter
- Antonia C. Schrader
- Dr. Paul Schultze-Motel
- Nina Leonie Weisweiler

**HELMHOLTZ**  
Open Science

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

# Milestones





# Open Access

# Open Access Policy of the Helmholtz Association, 2016

The screenshot shows the Helmholtz Open Science website. The header is dark blue with the 'HELMHOLTZ Open Science' logo on the left and a search bar on the right. Below the header is a navigation bar with links: Home, Open Science in the Helmholtz Association, Implementing Open Science, Projects, and Contact. The main content area has a left sidebar with a list of links including 'Open Access', 'Open Research Data', 'Open Research Software', 'Stakeholders and their functions', and 'National & International Network'. The main text area features the title 'Open Access Policy of the Helmholtz Association, 2016' and a brief introduction stating the policy was adopted on April 7, 2016. Below this is a section titled 'Publications by employees' which contains a paragraph about making work publicly accessible and a list of implementation rules (a, b, i, ii, iii). On the right side of the page, there are two boxes: 'Download' with a link to the policy document and 'Citation' with a citation in German and a DOI link.

**HELMHOLTZ**  
Open Science

Data Protection Deutsch English

Search

Open Science in the Helmholtz Association Implementing Open Science Projects Contact

**Open Access**

- Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities
- Open Access Gold
- Open Access Green
- Open access policies
- Open Access Policy of the Initiative and Networking Fund, 2013
- Open Access Policy of the Helmholtz Association, 2016**

**Open Research Data**

**Open Research Software**

**Stakeholders and their functions**

**National & International Network**

Helmholtz Open Science Office > Open Science in the Helmholtz Association > Open Access > Open access policies > Open Access Policy of the Helmholtz Association, 2016

## Open Access Policy of the Helmholtz Association, 2016

This policy was adopted by the Assembly of Members of the Helmholtz Association on 7 April 2016.

## Open Access Policy of the Helmholtz Association, 2016

### Publications by employees

In their endeavour to make results of their work publicly accessible for sharing with science, industry and society without any barriers, the Helmholtz Centres are asking their employees to make those publications accessible and open for sharing that they have authored alone or collectively with others as a result of their work for the Helmholtz Association.

For the implementation of this policy, employees ensure that

- (a) as soon as possible and at latest on publication, the peer-reviewed, accepted manuscript („final draft“) or, after publication, an electronic copy of the publisher's version is deposited in a repository (freely accessible archive),
- (b) this deposited publication is – via a repository – openly accessible
- (i) on publication, if an electronic version is available for free via the publisher (Gold Open Access article) or
- (ii) within 6 months (12 months in the humanities and social sciences) after publication of the original (Green Open Access article),
- (iii) for monographs within 12 months (24 months in the humanities and social sciences) after publication of the original (Green Open Access book)

### Download

[Open Access Policy of the Helmholtz Association, 2016](#)

### Citation

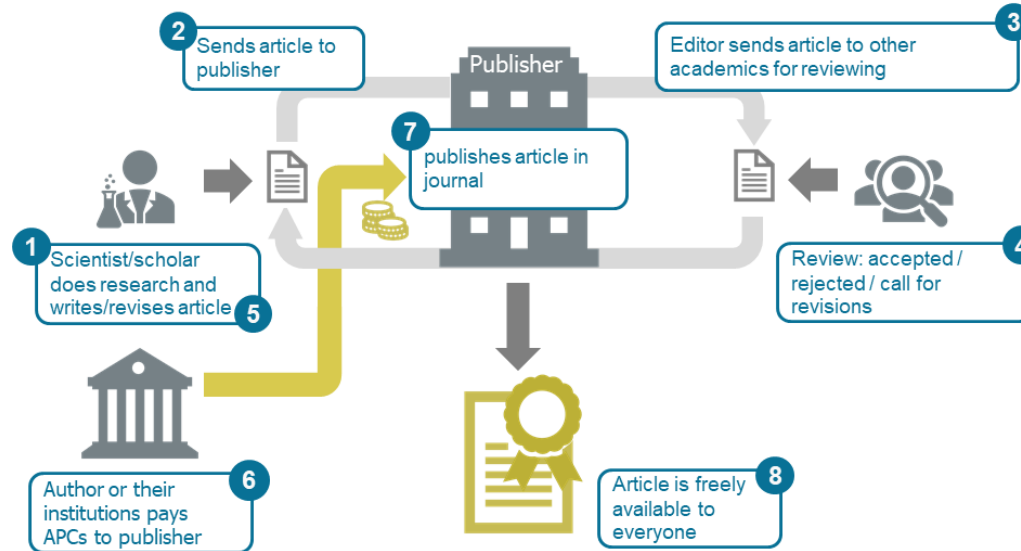
Mitgliederversammlung der Helmholtz-Gemeinschaft (Ed.) (2016): Open Access Policy of the Helmholtz Association, 2016, Potsdam: Helmholtz Open Science Office, 2 p.  
<https://doi.org/10.2312/os.helmholtz.018>

# Open Access Policy Framework

- 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.
- One of the Helmholtz Open Science Office's key endeavours is the promotion of the transformation from subscription-based access towards Open Access.
- In 2016, the Assembly of Members specified the [Open Access Policy](#) in concrete terms, offering a framework of action to the Helmholtz Centres for a coordinated transformation towards open access.
  - **almost 70 % of publications** (Green and Gold) of Helmholtz already published in Open Access for the publication year 2019 (analysis conducted in 2020).

# Types of Open Access

## Academic Publishing: Gold Open Access



Further information:

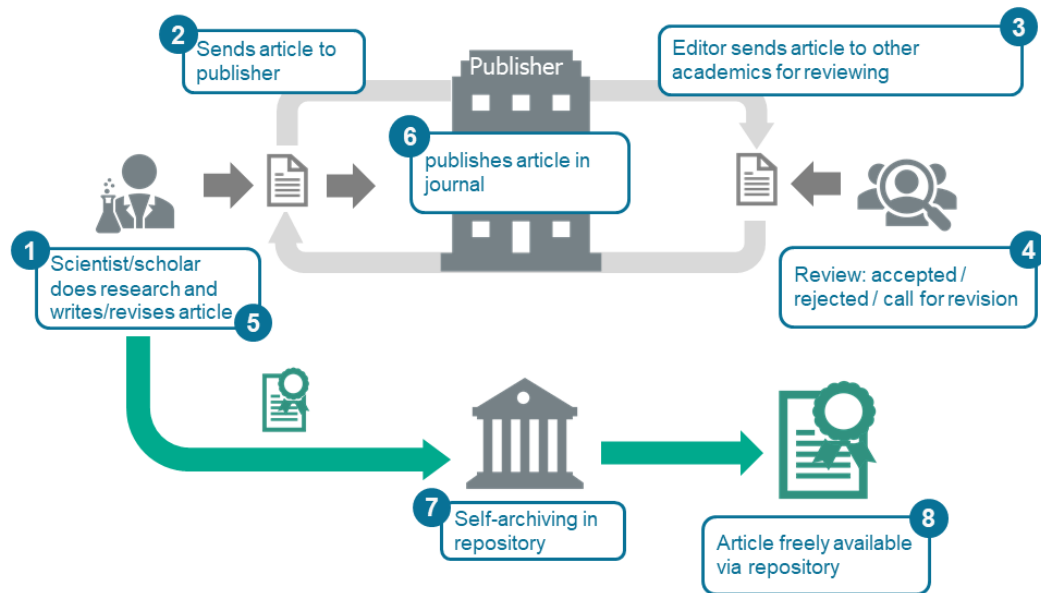
- [www.os.helmholtz.de](http://www.os.helmholtz.de)
- [www.open-access.net](http://www.open-access.net)

Source: Based on Oberländer, Anja (2020). Open Access – Es ist nicht alles Gold, was glänzt. In: Open Science. Von Daten zu Publikationen. Zenodo. <http://doi.org/10.5281/zenodo.4018594>



# Types of Open Access

## Academic Publishing: Green Open Access



Further information:

- [www.os.helmholtz.de](http://www.os.helmholtz.de)
- [www.open-access.net](http://www.open-access.net)

Source: Based on Oberländer, Anja (2020). Open Access – Es ist nicht alles Gold, was glänzt. In: Open Science. Von Daten zu Publikationen. Zenodo. <http://doi.org/10.5281/zenodo.4018594>



# Open Access

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

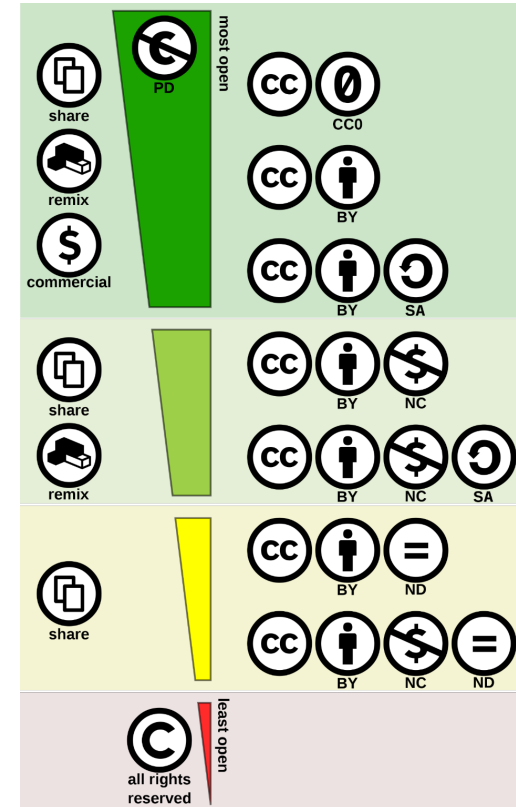
Open Access Green	Open Access Gold
<ul style="list-style-type: none"><li>▪ Diverse and distributed infrastructure of open access repositories (<a href="#">Helmholtz repositories and publication databases</a>)</li><li>▪ Participation in discipline-specific open access infrastructures (e.g., <a href="#">Inspire 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="#">Projekt DEAL</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>

# Creative Commons Licenses

- Free, easy-to-use copyright licenses → Standard to define how scientific work can be shared, used, and cited
- Recommendation for [CC BY 4.0](#)
- Further information: [www.creativecommons.org/](http://www.creativecommons.org/)

Further resources:

- Factsheet No. 1: [Open Access Publishing for Early Career Researchers at Helmholtz](#)
- Slides 61st Online-Seminar: [Open Access Publishing – Zooming in on Copyright and CC Licenses](#)



By Shaddim; CC BY 4.0

<https://commons.wikimedia.org/w/index.php?curid=47247325>

# Good Research Practice and Open Access Publishing

- Checklist to help you evaluate a journal or publication outlet: [Think. Check. Submit.](#)
- Helmholtz Open Science Office:  
[FAQs about predatory publishing](#)
- Directory of Journals: [DOAJ \(Directory of Open Access Journals\)](#)
- Further resources:
  - [Publishing Open Access: How to evaluate a journal's quality](#)
  - (in German) [Gute wissenschaftliche Praxis und Open-Science-Publizieren: Worauf Wissenschaftler:innen achten sollten](#)



Are you submitting your research to a trusted journal or publisher?  
Is it the right journal or book for your work?



Use our [check list](#) to assess the journal or publisher



Only if you can answer 'yes' to the questions on our [check list](#)





# How to Publish Open Access at Helmholtz?

- Many different types of research output can be published via open access: e.g., journal articles, cumulative dissertations, monographs – also datasets and research software.
- Open Access is the standard publication mode for employees of the Helmholtz Association: All research publications of Helmholtz employees shall be available in Open Access from 2025 onwards (according to the Open Access Policy).
- The Helmholtz Association provides funding and support options for Open Access publications.
  - The libraries of the Helmholtz Centers manage Open Access funds (see also: [Criteria for the Operation of Open Access Publication Funds and the Payment of Open Access Publication Fees](#))
  - Contact your library with questions concerning publications.

# Open Research Data

# Open Research Data

- Sustainable research data management (RDM) is a central component of good scientific practice – following the scheme “as open as possible, as closed as necessary”.
- With its complex scientific and technical infrastructures and data-intensive research activities, the Helmholtz Association is leading in generating, managing and providing access to [research data](#).
- The Helmholtz Open Science Office supports the Centers in developing policies and related practices in handling digital research data; esp. concerning the utilization of the [FAIR principles](#) in Helmholtz.
- The work of the Helmholtz Open Science Office complements the developments and work of platforms in the [Helmholtz Information & Data Science Incubator](#).



# Open Research Data in Helmholtz

## Forschungsdaten-Policies der Helmholtz-Zentren

Alle Helmholtz-Zentren verfügen über sektionsspezifische Forschungsdaten-Policies. Auf Beschluss der Helmholtz Mitgliederversammlung sollen diese Policies je Zentrum durch eine übergreifende, zentrumsweit geltende Policy ergänzt werden. Die folgende Tabelle gibt einen Überblick über den Stand dieses Prozesses.

Zentrum	Policy
AWI	Leitlinie Richtlinie
CISPA	in Vorbereitung
DESY	in Vorbereitung
DKFZ	in Vorbereitung
DLR	Policy
DZNE	Policy
FZJ	Policy
GEOMAR	in Vorbereitung
GFZ	Policy
GSI	in Vorbereitung
HEREON	Policy
HMGU	in Vorbereitung
HZB	Policy
HZDR	Policy
HZI	Policy
KIT	Policy
MDC	Policy
UFZ	Policy

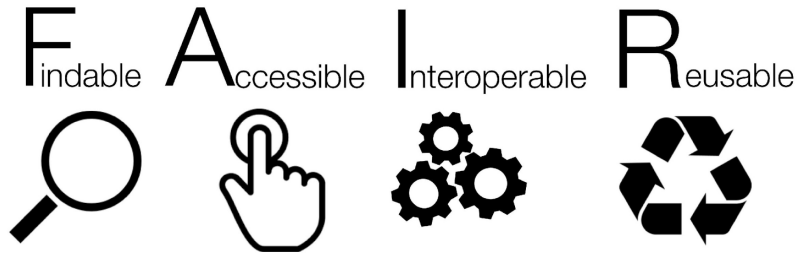
Stand: 15.06.2021

## Are you aware of...

- Position paper “Making information resources more usable” on the handling of research data
- Recommendations for guidelines of the Helmholtz Centers for handling research data (in German only: „Empfehlungen für Richtlinien der Helmholtz-Zentren zum Umgang mit Forschungsdaten“)
- Research Data Policies of the Helmholtz Centers

# Support for Open Research Data Publication

- Follow the guiding principles to make data



By Sangya Pundir; CC BY SA 4.0,  
<https://commons.wikimedia.org/w/index.php?curid=53414062>

- More information:  
[www.go-fair.org/fair-principles/](http://www.go-fair.org/fair-principles/)

- Find an appropriate repository to deposit or search for research datasets:



- More information:  
<https://www.re3data.org/>

# Research Data Repositories and Portals in Helmholtz

- The Helmholtz Centers operate over 100 data infrastructures in the Association in which unique and valuable digital research data is curated and stored.



The screenshot shows a web browser window with the URL [os.helmholtz.de](https://os.helmholtz.de). The page title is "Liste der Forschungsdatenrepositorien und -Portale mit Helmholtz-Beteiligung". Below the title, a paragraph states: "Folgende Liste dokumentiert die Forschungsdatenrepositorien und -Portale in der Helmholtz-Gemeinschaft. Weitergehende Informationen finden sich im [re3data Registry](#)." Below this is a table with three columns: "Name des Forschungsdatenrepositoriums", "Beteiligte Helmholtz-Zentren", and "re3data DOI".

Name des Forschungsdatenrepositoriums	Beteiligte Helmholtz-Zentren	re3data DOI
AIRS/Aqua Observations of Gravity Waves	Forschungszentrum Jülich	<a href="https://doi.org/10.17616/R34J42">https://doi.org/10.17616/R34J42</a>
Aktuelle Wetterwerte deutscher Stationen	Karlsruher Institut für Technologie (KIT)	<a href="https://doi.org/10.17616/R37C7D">https://doi.org/10.17616/R37C7D</a>
Arctic Permafrost Geospatial Centre	Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung	<a href="https://doi.org/10.17616/R31NJMQK">https://doi.org/10.17616/R31NJMQK</a>
B2SHARE Server Forschungszentrum Jülich	Forschungszentrum Jülich	<a href="https://doi.org/10.17616/R31NJMM6">https://doi.org/10.17616/R31NJMM6</a>
Baseline Surface Radiation Network (BSRN)	Alfred-Wegener-Institut Helmholtz-Zentrum für Polar- und Meeresforschung	<a href="https://doi.org/10.17616/R3JW60">https://doi.org/10.17616/R3JW60</a>
BonaRes Repository	Helmholtz-Zentrum für Umweltforschung - UFZ	<a href="https://doi.org/10.17616/R31NJMVY">https://doi.org/10.17616/R31NJMVY</a>
CARIBIC	Deutsches Zentrum für Luft- und Raumfahrt (DLR) Helmholtz-Zentrum hereon Karlsruher Institut für Technologie (KIT)	<a href="https://doi.org/10.17616/R3N347">https://doi.org/10.17616/R3N347</a>
CHAMP	Deutsches Zentrum für Luft- und Raumfahrt (DLR) Helmholtz-Zentrum Potsdam - Deutsches GeoForschungsZentrum GFZ	<a href="https://doi.org/10.17616/R3GG80">https://doi.org/10.17616/R3GG80</a>
chemotion	Karlsruher Institut für Technologie (KIT)	<a href="https://doi.org/10.17616/R34P5T">https://doi.org/10.17616/R34P5T</a>
circbase	Max-Delbrück-Zentrum für Molekulare Medizin in der Helmholtz-Gemeinschaft	<a href="https://doi.org/10.17616/R3QB7D">https://doi.org/10.17616/R3QB7D</a>

[Link](#)

Information source:

**re3data.org**  
REGISTRY OF RESEARCH DATA REPOSITORIES

# Persistent Identifiers (PID)

- **Identifier** = a string of digits referring to an object
- **Unique** = only refers to one particular object
- **Universal** = is valid for the whole world (or world wide web)
- **Persistent** = shall remain available independent of individual institutions, systems or system implementations



- Digital Object Identifier
- Persistent and unique identification of digital objects



- Open Researcher and Contributor iD
- Unique digital identifier for researchers and other content creators
- Get an ORCID iD: [www.orcid.org/register](https://www.orcid.org/register)

# Research Data Management on the National Level – NFDI

- With the National Research Data Infrastructure (NFDI), the German federal and state governments pursue the goal of systematically making research data resources accessible in accordance with FAIR principles.
- The NFDI will be established over a three-year period in three successive funding phases as a network of up to 30 research-community-based consortia.

## Timeline:

- 2016: Proposal of the German Council for Scientific Infrastructures (RfII)
- 2018: “Bund-Länder-Vereinbarung” to build an NFDI
- 2019 – 2020: NFDI starts as a project, hosted at FIZ Karlsruhe and KIT.
- 2020: NFDI Association (NFDI e.V.) is founded.

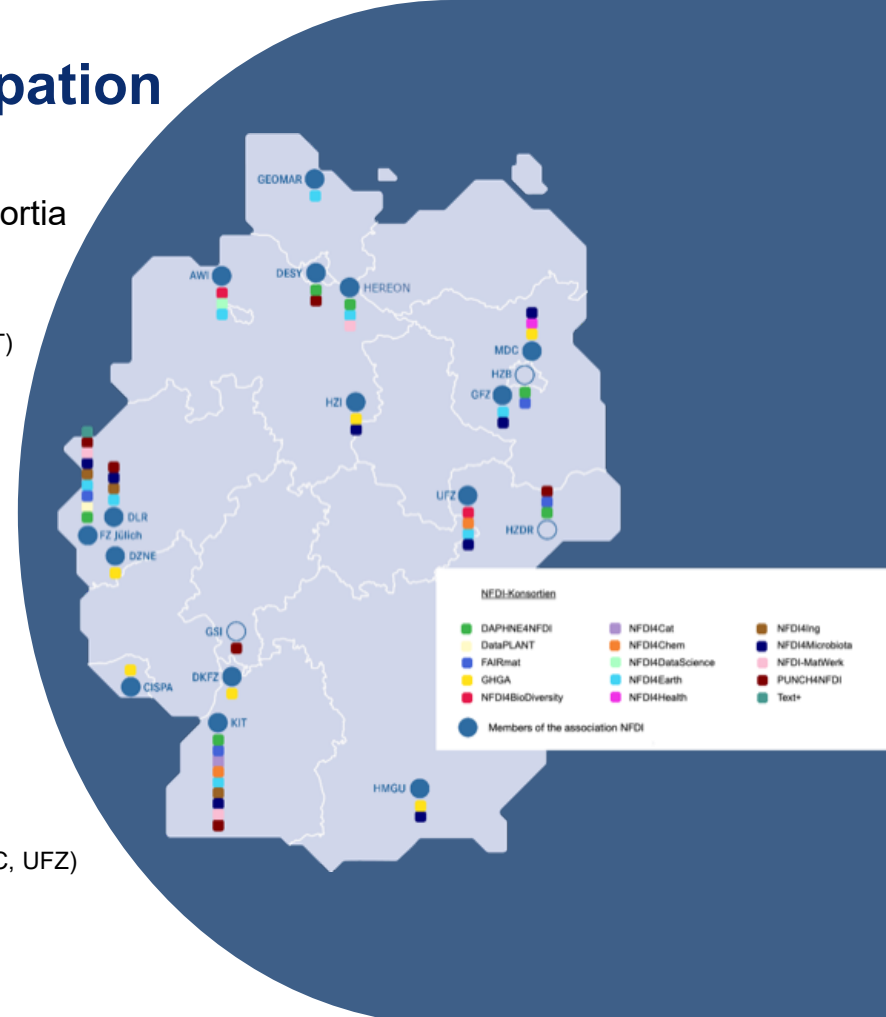
## More info:

Weisweiler, N. L. et. al. (2021): Helmholtz in der Nationalen Forschungsdateninfrastruktur (NFDI): Report des Helmholtz Open Science Forums (Helmholtz Open Science Briefing), [doi.org/10.48440/os.helmholtz.030](https://doi.org/10.48440/os.helmholtz.030) (in German)



# Open Research Data – NFDI Participation

- Helmholtz Centers are involved in the following NFDI consortia (15 out of 19 consortia, as of October 2021):
  - [DAPHNE4NFDI](#) (Participation from Helmholtz: DESY, FZJ, HZB, HZDR, HEREON, KIT)
  - [DataPLANT](#) (Participation from Helmholtz: FZJ)
  - [FAIRmat](#) (Participation from Helmholtz: FZJ, HZB, HZDR, KIT)
  - [GHGA](#) (Participation from Helmholtz: CISPA, DKFZ, DZNE, HMGU, HZI, MDC)
  - [NFDI4BioDiversity](#) (Participation from Helmholtz: AWI, UFZ)
  - [NFDI4Cat](#) (Participation from Helmholtz: KIT)
  - [NFDI4Chem](#) (Participation from Helmholtz: KIT, UFZ)
  - [NFDI4DataScience](#) (Participation from Helmholtz: AWI)
  - [NFDI4Earth](#) (Participation from Helmholtz: AWI, DLR, FZJ, GEOMAR, GFZ, HEREON, KIT, UFZ)
  - [NFDI4Health](#) (Participation from Helmholtz: MDC)
  - [NFDI4Ing](#) (Participation from Helmholtz: FZJ, DLR, KIT)
  - [NFDI4Microbiota](#) (Participation from Helmholtz: DLR, FZJ, GFZ, HMGU, HZI, KIT, MDC, UFZ)
  - [NFDI-MatWerk](#) (Participation from Helmholtz: FZJ, HEREON, KIT)
  - [PUNCH4NFDI](#) (Participation from Helmholtz: DESY, DLR, FZJ, GSI, HZDR, KIT)
  - [Text+](#) (Participation from Helmholtz: FZJ)



# Open Research Data – NFDI e.V.

- In 2020, the non-profit Association “**Nationale Forschungsdateninfrastruktur (NFDI) e.V.**” (based in Karlsruhe) was founded to coordinate the activities for establishing a national research data infrastructure together with the NFDI consortia.
- The following centers are actively involved in the NFDI e.V. as members (as of September 2021):
  - Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research (AWI)
  - CISA – Helmholtz Center for Information Security
  - Deutsches Elektronen-Synchrotron DESY
  - German Cancer Research Center (DKFZ)
  - German Aerospace Center (DLR)
  - German Center for Neurodegenerative Diseases (DZNE)
  - Forschungszentrum Jülich
  - GEOMAR Helmholtz Centre for Ocean Research Kiel
  - Helmholtz Centre for Infection Research (HZI)
  - Helmholtz Centre for Environmental Research – UFZ
  - Helmholtz-Zentrum Hereon
  - Helmholtz Zentrum München – German Research Center for Environmental Health (HMGU)
  - Helmholtz Centre Potsdam – GFZ German Research Centre for Geosciences
  - Karlsruhe Institute of Technology (KIT)
  - Max Delbrück Center for Molecular Medicine in the Helmholtz Association (MDC)

# Open Research Data – EOSC Participation

- The European Open Science Cloud (EOSC) has 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.
- There are currently (as of August 2021) 10 Helmholtz Centers involved in a total of 23 on-going EU projects related to EOSC.
- In addition, several Helmholtz employees have been recruited to work in Task Forces, which from five Advisory Groups of the EOSC Association.



**EUROPEAN OPEN  
SCIENCE CLOUD**

# Curious? Learn more: Helmholtz Open Science Fora

## 2nd Helmholtz Open Science Forum:

### Helmholtz in the National Research Data Infrastructure (NFDI)

- December 08, 2021, 10:00 – 15:00

## Helmholtz Open Science Practice Forum:

### Research Data Management

- February 03, 2022, 10:00 – 15:00

**HELMHOLTZ**  
Open Science

# Open Research Software

# Open Research Software

At the Helmholtz Centers, various research software initiatives are currently being implemented:

- [Position paper](#) – “Access to and re-use of research software” (German only)
- [Model guideline](#) – “Model guideline for sustainable research software at the Helmholtz Centers” (German only)
- [Recommendations](#) – “Recommendations for the implementation of guidelines and policies for handling research software at the Helmholtz Centers” (German only)

# Open Research Software

## Current tasks comprise:

- Workshops on “Policies for Research Software”  
(German only)
- Checklist for the Implementation of Software Policies at the Helmholtz Centers (German only) ↓

## Checklist (Example):

### 4.2 Formulation

- ✓ Stating the motivation for the implementation of a policy
- ✓ Definition of the scope of the policy
- ✓ Selection of the parts of the model guide that are relevant for the Center

## HELMHOLTZ Open Science

### 4.2 Formulierung

Relevante Aspekte bei der Formulierung einer Richtlinie für nachhaltige Forschungssoftware an einem Helmholtz-Zentrum:

- ✓ Benennung der Motivation zur Implementierung einer Richtlinie am Zentrum
  - Formulierung der Argumente für Open Research Software (am Zentrum)
  - Compliance: Nennung von Rahmenbedingungen durch Mittelgeber\*innen (z. B. durch Förderorganisationen)
  - Kenntnis der aktuellen Diskussionen zum Thema, z. B. Übersicht zu FAIR Software<sup>13</sup>
  - Berücksichtigung der Ausgangslage im Zentrum
  - Bezugnahme auf allgemeine Aussagen von Helmholtz zur Offenheit
  - Bezugnahme auf weitere interne Regelungen
  - Erfassung der internen Software-Kultur am Zentrum
  - Berücksichtigung möglicher Bedenken gegen Open Research Software
- ✓ Definition des Geltungsbereichs der Richtlinie, z. B.
  - Klärung folgender Fragen: Wer ist von der Richtlinie betroffen? Wirkt die Richtlinie auch auf Kooperationsprojekte sowie auf Gastwissenschaftler\*innen?
- ✓ Auswahl der am Zentrum relevanten Bausteine aus der Musterrichtlinie
  - Entwurf der Gliederung und Festlegungen des Umfangs, ggf. auch Festlegung von begleitenden Dokumenten
    - Nachhaltigkeit
    - Entwicklung, Verwendung und Nachnutzung von Forschungssoftware
    - Angebote zur Unterstützung und Beratung
    - Qualitätssicherung und Archivierung
    - Weiterbildung, Karriereperspektiven (inkl. Anerkennung) und Vernetzung

<sup>13</sup> Siehe Abb./ Tab. aus Katz, D. S., Gruenpeter, M., & Honeyman, T. (2021). Taking a fresh look at FAIR for research software. *Patterns*, 2(5), 100267. DOI: <https://doi.org/10.1016/j.patter.2021.100267>

# Open Research Software

Do you think the checklist sufficiently addresses  
your needs and practices?

We are eager to get to know your thoughts –  
it is a living document!



## HELMHOLTZ Open Science

### 4.2 Formulierung

Relevante Aspekte bei der Formulierung einer Richtlinie für nachhaltige Forschungssoftware an einem Helmholtz-Zentrum:

- ✓ Benennung der Motivation zur Implementierung einer Richtlinie am Zentrum
  - Formulierung der Argumente für Open Research Software (am Zentrum)
  - Compliance: Nennung von Rahmenbedingungen durch Mittelgeber\*innen (z. B. durch Förderorganisationen)
  - Kenntnis der aktuellen Diskussionen zum Thema, z. B. Übersicht zu FAIR Software<sup>13</sup>
  - Berücksichtigung der Ausgangslage im Zentrum
  - Bezugnahme auf allgemeine Aussagen von Helmholtz zur Offenheit
  - Bezugnahme auf weitere interne Regelungen
  - Erfassung der internen Software-Kultur am Zentrum
  - Berücksichtigung möglicher Bedenken gegen Open Research Software
- ✓ Definition des Geltungsbereichs der Richtlinie, z. B.
  - Klärung folgender Fragen: Wer ist von der Richtlinie betroffen? Wirkt die Richtlinie auch auf Kooperationsprojekte sowie auf Gastwissenschaftler\*innen?
- ✓ Auswahl der am Zentrum relevanten Bausteine aus der Musterrichtlinie
  - Entwurf der Gliederung und Festlegungen des Umfangs, ggf. auch Festlegung von begleitenden Dokumenten
    - Nachhaltigkeit
    - Entwicklung, Verwendung und Nachnutzung von Forschungssoftware
    - Angebote zur Unterstützung und Beratung
    - Qualitätssicherung und Archivierung
    - Weiterbildung, Karriereperspektiven (inkl. Anerkennung) und Vernetzung

<sup>13</sup> Siehe Abb./Tab. aus Katz, D. S., Gruenpeter, M., & Honeyman, T. (2021). Taking a fresh look at FAIR for research software. *Patterns*, 2(5), 100267. DOI: <https://doi.org/10.1016/j.patter.2021.100267>



# (Open Science) Indicators at Helmholtz

## Background:

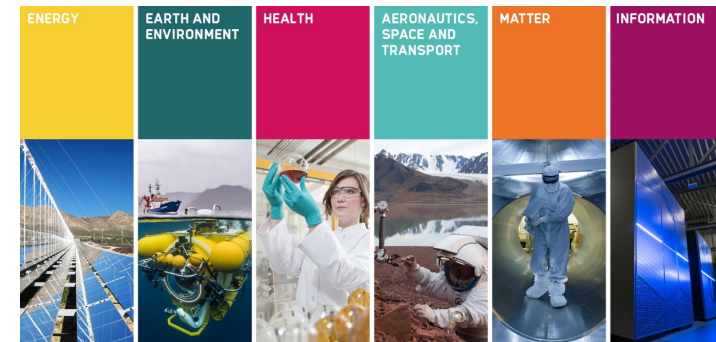
- Different research fields have different publication practices, places and platforms
- In Helmholtz the Program-Oriented Funding (POF) indicators are relevant for appreciation of research publication output

## Challenges:

- Not all incentives, indicators and KPIs in Helmholtz are suitable for the different research fields
- There is a need for more incentives for Open Science practices

## Aims:

- Giving impulses for advancing indicators in the POF rating
- Creating indicators that incentivize Open Science practices, and enable appreciation of the work involved



# campusSOURCE Award 2022

- Prize for individuals or teams who make significant contributions to supporting scientifically active persons, who develop research software and thereby enable new and innovative research software solutions.
- In total, a prize money of 17,000 EUR is available.
- [Call for Application](#) > Submission until **December 15, 2021**
- The campusSOURCE Award 2022 is supported by [campusSOURCE e. V.](#), the Helmholtz Open Science Office, and [the Society for Research Software de-RSE e.V.](#)



# German Reproducibility Network (GRN)



**Become a member of the GRN!**

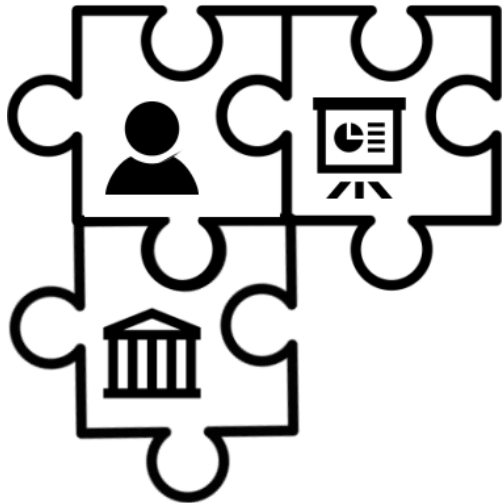
[How to join](#)

- [Website](#) | Twitter: [@GermanRepro](#)
- Part of the founding members are **Helmholtz AI** and the **Helmholtz Open Science Office**
- It is a cross-disciplinary consortium, which promotes reproducible and robust research on a national level.
- [Slides](#) & [Program](#) of the **First German Reproducibility Day**

# Wrap up

# Open Science as the promoter of the digital transformation

- **Open science** and **digitization** go hand in hand.
- Adjustments of workflows and business processes at the centers are needed. → **Change process**
- Open science implies a cultural change in the scientific way of working, organization, and communication.



- Consistently employ **digitization** to make all components of the scientific process **open, comprehensible, reusable, and easily accessible** to everyone.
  - Discussion on **transfer** must not be contradictory to open science.
- We need further discussions and guidance for researchers.

# How can we work together to further promote the “Open Science Culture” within the Association?

Collect your ideas, wishes, and suggestions in the following Online Pad:

[https://pad.okfn.de/p/Open\\_Science\\_for\\_the\\_Helmholtz\\_Association](https://pad.okfn.de/p/Open_Science_for_the_Helmholtz_Association)

## Discussion Questions

1. What role does open science play in your own research?
2. Which open science topics would you like to learn more about in the future?
3. What do you experience as the greatest obstacles to open science in your daily work?
4. Do you have case studies or examples to share of your own engagement with open science practices that could be inspirational for other researchers?
5. Which resources, events, or infrastructures could support your open science activities further?

## Further information on our website:

- Open Access
  - Task Group Open Access Transformation
- Open Research Data
  - Task Group for the Implementation of the Guidelines on Research Data
- Open Research Software
  - Task Group Research Software
- National and international Network
  - Allianz der deutschen Wissenschaftsorganisation:  
Schwerpunktinitiative “Digitale Information”
  - German Reproducibility Network (GRN)
  - Research Data Alliance (RDA)
  - RDA Deutschland

## Contact

- Mail – [open-science@helmholtz.de](mailto:open-science@helmholtz.de)
- Website – <https://os.helmholtz.de>
- [Open Science Newsletter](#)
- Mailing list (only for members of Helmholtz) – [Helmholtz Open Science Professionals](#)
- Twitter – [@helmholtz\\_os](#)
- LinkedIn – [Helmholtz Open Science Office](#)



# Thank you for your interest!

Helmholtz Open Science Office:

Lea Maria Ferguson,  
<https://orcid.org/0000-0002-7060-3670>

Antonia C. Schrader,  
<https://orcid.org/0000-0001-7080-634X>

Nina Leonie Weisweiler,  
<https://orcid.org/0000-0001-6967-9443>

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