



A – Z OF FAIR

At HMC we are firm believers in metadata and FAIR – both to help science, and to smooth your daily interactions with data – that is why we’ve put together a long list of ways you can try to be a little more FAIR. We hope it helps.

A **Archive** your data in a repository instead of a hard drive. Your institution probably has its own repository that is free for you to use.

B **Begin today** – try one step right now, here are some suggestions for you to get started:

1. [Add descriptions and context to your data](#) (e.g., in a README file)
2. [Get a persistent identifier for your data](#)
3. [Preserve data in an \(open\) format common to your field](#)
4. [Assign a clear data usage licenses to your data](#)
5. [Deposit \(meta\)data in a searchable resource](#) (e.g., trusted repository) where possible

C Let others connect to your work by creating **citation** possibilities (see P-PID and R-Research output).

D To avoid a data disaster write a **data management plan** before beginning a project, and at the end verify you have sufficient **documentation** (see S-Standards and as a bonus A-Archiving for long-term data storage).

E You’re the **expert** in your research but not everyone is, that is why enriching your data with metadata (additional documentation) is important, and as a bonus it makes collaboration even easier.

F **FAIR** stands for findable, accessible, interoperable, and reusable. Focus on the points in this A to Z and take your first steps towards FAIR.

G **Good results** become groundbreaking research by adding proper supporting evidence – this is easier when documenting your research digitally, for example using an electronic lab notebook.

H **HMC** focuses on the mayor challenges derived from making Helmholtz data visible and FAIR – especially in the context of interoperability and reusability.

I Storing your data in **interoperable** (non-proprietary) file formats makes writing scripts for file conversion obsolete. Yeah!

J **Joint effort** leads to greater impact. Join with us and your colleagues – together we can turn FAIR into reality.

K Keen on using artificial intelligence in your work? HMC can provide you with support on using **knowledge representation** techniques, such as ontologies. (for a deeper insight into AI check out Helmholtz.AI)

L Liberate your data by using open-access **licences** when storing them in a long-term-archive. Let go and let HMC lead you through the licence landscape.

M You don’t need magic or a miracle. **Meaningful metadata** makes your data memorable so your research makes an impact.

N Now is the time to join your (meta)data community. Notable **networks** include: HMC for Helmholtz, NFDI in Germany (contact your discipline specific consortia), EOSC on the european level and internationally the RDA – FAIR, like research, is a local, national and international endeavour.

O Use an **ORCID** and show you are the origin of your output. ORCID helps others navigate your research.

P Preserving your data is painless when you use a **persistent identifier** (PID) e.g. O – ORCID. Bonus: you can be cited (see C – Citation)

Q Don’t feel **qualified**? Don’t worry HMC can quench your thirst for knowledge. We have regular training offers so you can join us on our quest & to get you quickly up to speed.

R **Research outputs** go beyond papers. Recognize the value of your work and gain recognition by uploading data, software, protocols, preprints to **repositories**.

REPOSITORY SEARCH

Software	www.Github.com www.sourceforge.net www.savannah.gnu.org www.launchpad.net
Experimental workflow and protocols	workflowhub.eu www.protocols.io
Want to search for other repositories?	www.re3data.org www.opendoar.org
General purpose	www.zenodo.org www.figshare.com www.osf.io

S Synchronize with the scientific community and keep your sanity by using **standards**, examples include metadata standards, standard file formats and SI units.

T **Trust** your data, trust your tools, trust your instruments, trust your collaborators, trust your infrastructures. Trust HMC to help you.

U **Use** other people’s data to become unstoppable.

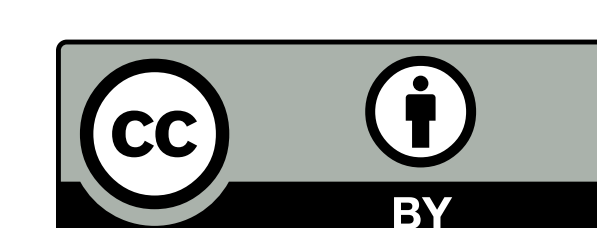
V **Version control** is a versatile way of verifying all changes to software and files. This is valuable when validating your work.

W Your day is filled with **workflows** – steps in a work process. Formalising your workflows increases time spent on research.

X **Xeranthemum, xerochrysum and xanthisma** form part of the shared and standardised vocabulary of botanists. Using a standardised vocabulary for your research helps you avoid misunderstandings and communicate your work clearly.

Y **Yesterday’s** data can support tomorrow’s research.

Z **Zukunft** – Your data depends on you. What impact will your data have?



The document is published here:
https://doi.org/10.3289/HMC_publ_07
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CONTACT

If you would like to create (better) metadata, are interested in activities of the Helmholtz Metadata Collaboration (HMC), or have any questions, we are happy to help you:

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