

Publishing Research Data Made Easy:

A Hands-on Guide to Open Data LMU (and Other Repositories)

Open Science Initiative in Medicine (OSIM) Meeting – April 2025

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11.04.2025



What will we cover?



- Data publication as a service by the University Library
- Why open data?
- Data repositories
- Hands-on Guide to publish data on Open Data LMU

Why are we here today?

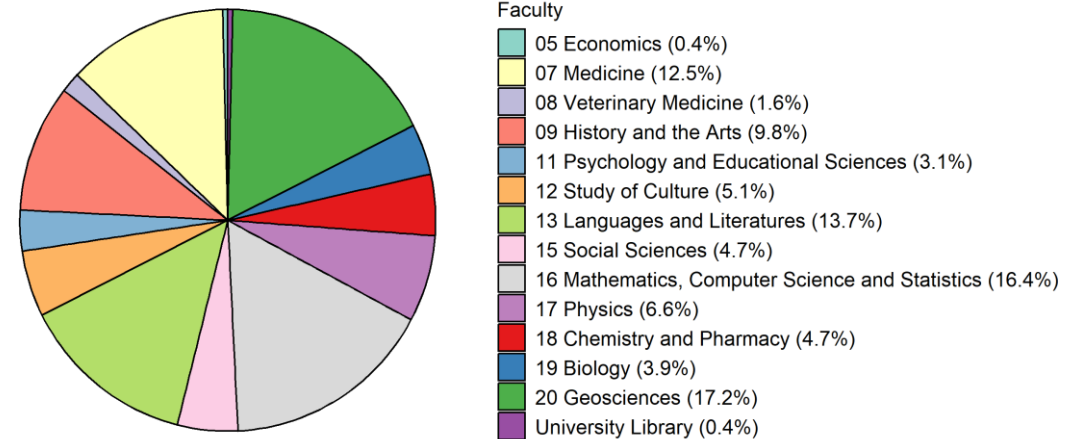


- The University Library LMU...
 - ... supports Open Data publications
 - ... offers infrastructure for data publications (e.g., repositories)
 - ... offers services for data publication (e.g., consultation, information)

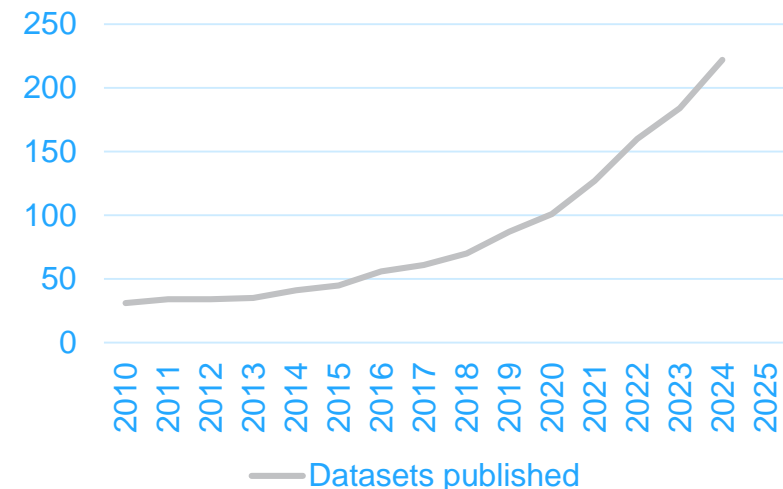
Why are we here today?

- A Short History:
 - 2010: Open Data LMU was established
 - 2018: research project "eHumanities – interdisciplinary" helped to establish new services
 - 2020: RDM Information @ University Library founded

Datasets by Faculties



Datasets in Open Data LMU

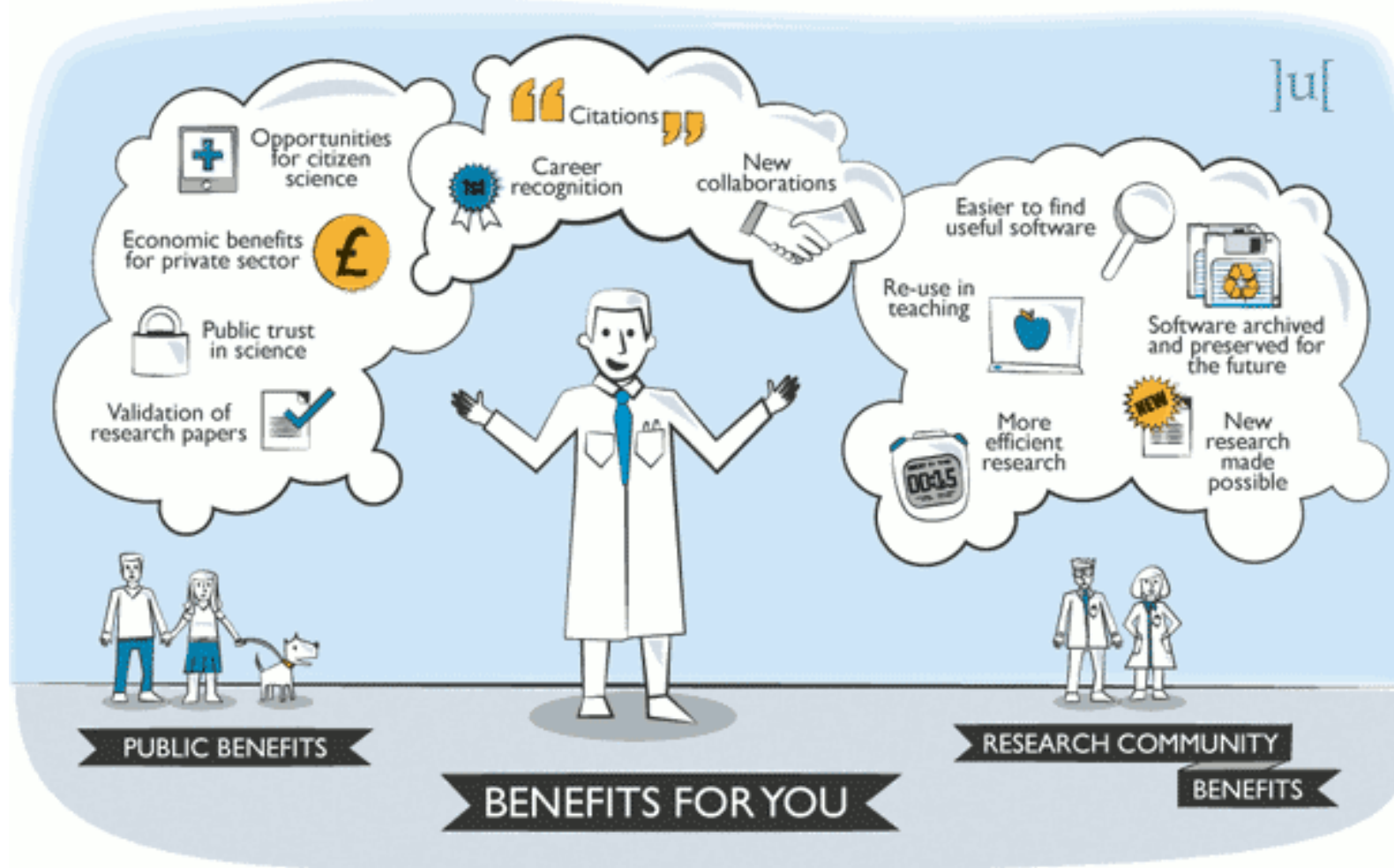


Why Data Publication? - Advantages

- Is increasingly financed by third-party funders
- Improving traceability of research data
- Long term visibility, better reusability and citability of published data
- Articles published together with the corresponding research data are cited more frequently

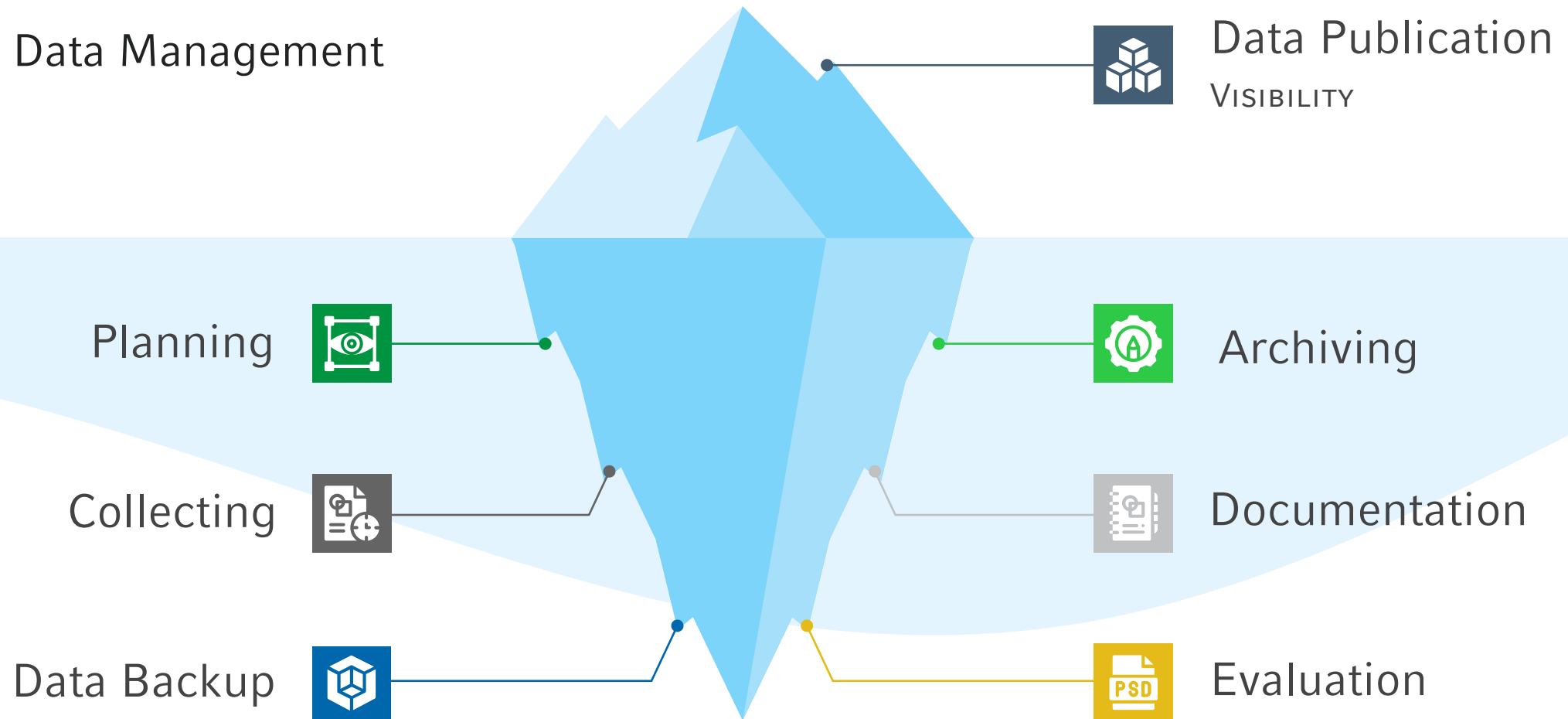
(e.g. <https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0225883>)

Why Data Publication? - Advantages



What's behind all of that?

Research Data Management



Data publication – Data repositories

Research data repositories are a part of web-based information infrastructure that supports the accessibility and the (re-)usability of digital research data.

Based on the requirements of a defined target group the repository ensures, that

- the research data will be provided in
a **data format which is appropriate for re-use,**
- the research data are **citable and described by established schemata for metadata,**
- the research data are **enriched with informations on terms of use.**



DISCOVER, REUSE & CITE



MANAGE, STORE, PRESERVE

Gaelen Pinnock CC BY-SA

Data publication – Data repositories

Types of repositories:

- Discipline-specific (e.g., [DRYAD](#))
- Generic (e.g., [Zenodo](#))
- Institutional
 - [Open Data LMU](#)
 - [Discover](#)

The image displays two screenshots of data repositories. The top screenshot is the DRYAD website, featuring a header with the DRYAD logo and navigation links (About, Partner with us, Support us, Help, Login). Below the header is a banner with a fossil image and the text "Trusted, simple, community driven". A search bar with the placeholder "Explore data" and a "Search" button is visible. Below the banner is a section with text about institutional partnerships and a "Submit now" button. The bottom screenshot is the Zenodo website, showing a header with the Zenodo logo, a search bar, and navigation links (Communities, My dashboard, Log in, Sign up). Below the header is a "Recent uploads" section with two entries. The first entry is titled "Embracing open science principles to improve reproducibility in Environmental Data Science" by Coca-Castro, Alejandro, and is labeled as a "Presentation" and "Open". The second entry is titled "More is not always better: Peat moss mixtures slightly enhance peatland stability" by Robroek, Bjorn, Devilee, Giulia, and Telgenkamp, Yvet, and is labeled as a "Dataset" and "Open". A sidebar on the right titled "Why use Zenodo?" lists several benefits: Safe, Trusted, Citable, No waiting time, Open or closed, Versioning, GitHub integration, and Usage statistics.

DRYAD

About | Partner with us | Support us | Help | Login

Trusted, simple, community driven

Explore data | Search

Institutions, publishers, and academic societies partner with Dryad to sponsor data curation, publishing, and preservation for researchers. [Learn about partnership](#)

Submit now

zenodo

Search records... | Communities | My dashboard | Log in | Sign up

Recent uploads

December 5, 2023 (v1) | Presentation | Open

Embracing open science principles to improve reproducibility in Environmental Data Science

Coca-Castro, Alejandro

This presentation is given by members of The Turing Way and EDS book projects as part of the FAIR in ML, AI Readiness, & Reproducibility RCN (FARR) network. The presentation shares insights from the Turing Way and EDS book projects focused on the outcomes of the Climate Informatics Reproducibility Challenge. The videos/animations of winning and...

Uploaded on December 5, 2023

December 5, 2023 (v1) | Dataset | Open

More is not always better: Peat moss mixtures slightly enhance peatland stability

Robroek, Bjorn | Devilee, Giulia | Telgenkamp, Yvet

Species-poor peatlands challenge biodiversity–ecosystem function theory, which generally links high species diversity to stable ecosystem functions. An open question in ecosystem ecology is whether assemblages of naturally co-occurring peat mosses contribute to the stability of peatland ecosystem processes. We used a replacement series mesocosm...

Uploaded on December 5, 2023

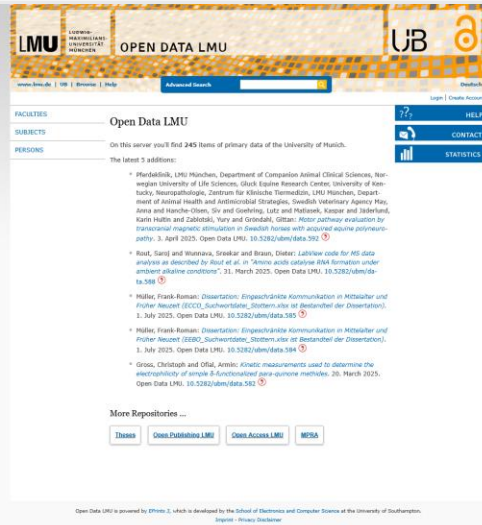
December 5, 2023 (v1) | Presentation | Open

Research objects FAIRness assessment for Earth and Environmental science applications

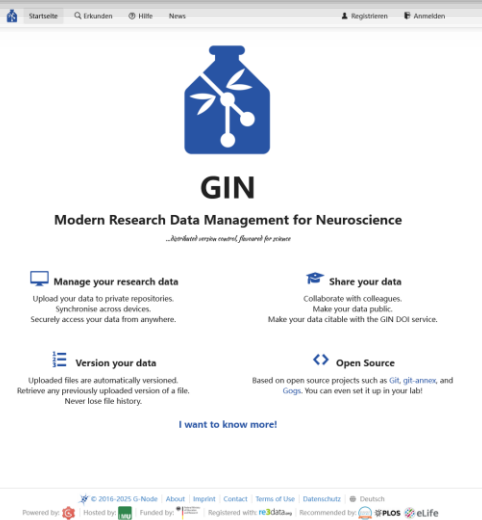
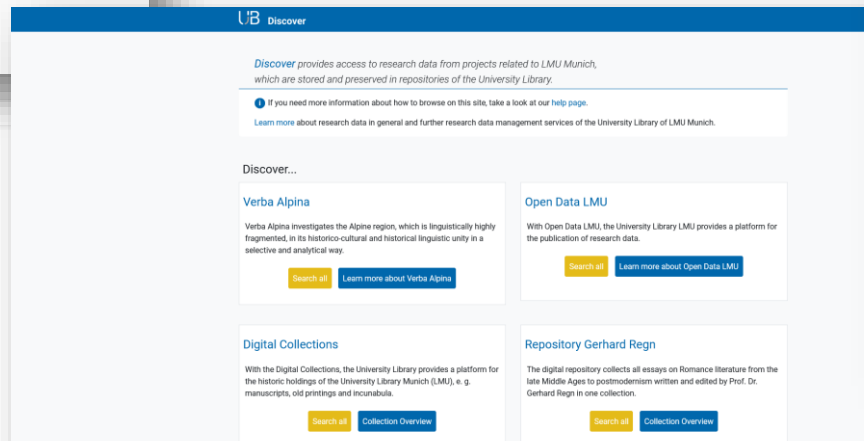
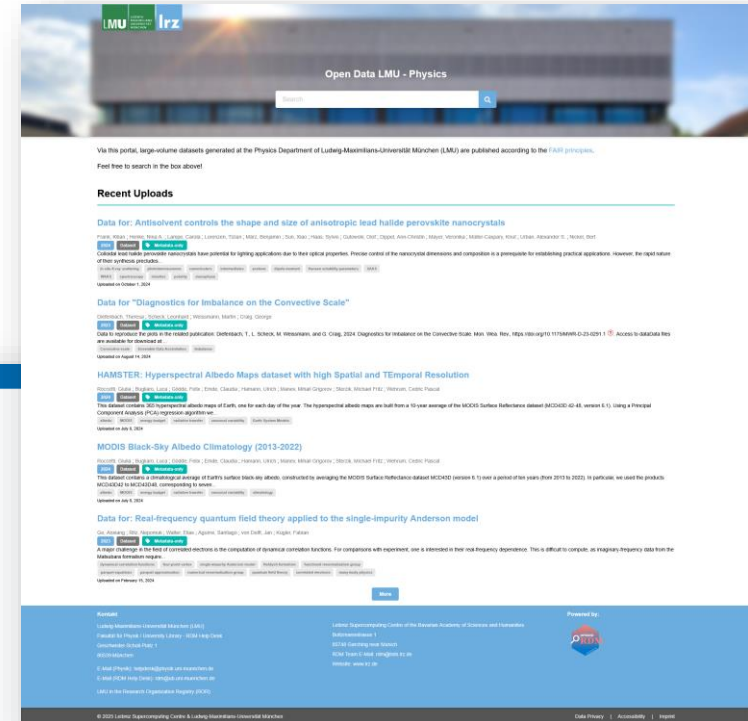
Why use Zenodo?

- **Safe** — your research is stored safely for the future in CERN's Data Centre for as long as CERN exists.
- **Trusted** — built and operated by CERN and OpenAIRE to ensure that everyone can join in Open Science.
- **Citable** — every upload is assigned a Digital Object Identifier (DOI), to make them citable and trackable.
- **No waiting time** — Uploads are made available online as soon as you hit publish, and your DOI is registered within seconds.
- **Open or closed** — Share e.g. anonymized clinical trial data with only medical professionals via our restricted access mode.
- **Versioning** — Easily update your dataset with our versioning feature.
- **GitHub integration** — Easily preserve your GitHub repository in Zenodo.
- **Usage statistics** — All uploads display standards compliant usage statistics

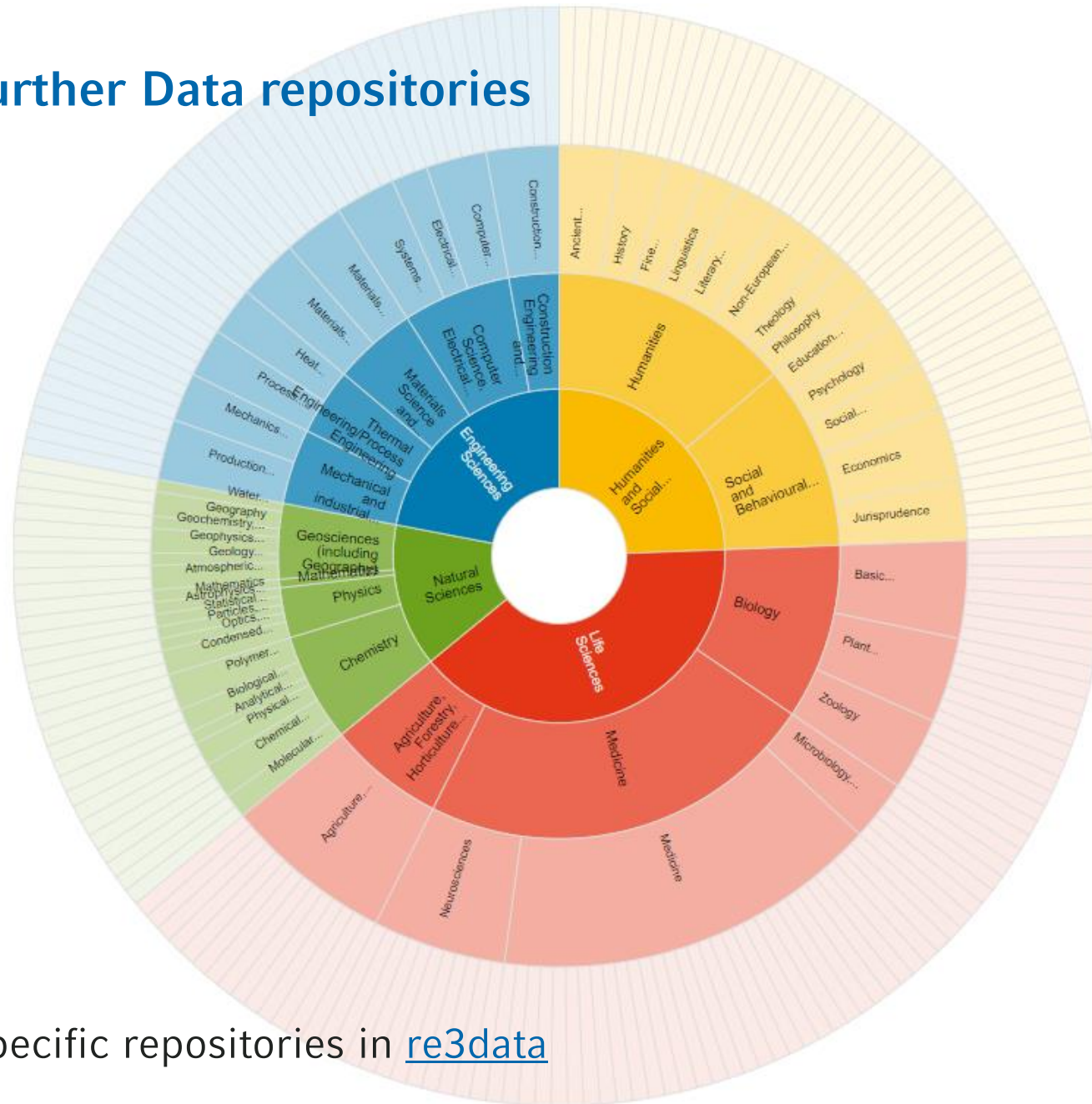
Data publication – Data repositories @ LMU



- Open Data LMU
- Open Data LMU – Physics
- Discover
- GIN



Data publication – Further Data repositories



Search for discipline-specific repositories in [re3data](https://re3data.org/)

Data publication in a nutshell

What shall be published?

- Which data are meaningful?
- What can be reused?

What is allowed / authorised to be published?

- Is anonymisation necessary / guaranteed?
- Who owns the data?

„As open as possible, as closed as necessary!“



Digitalbevaring.dk

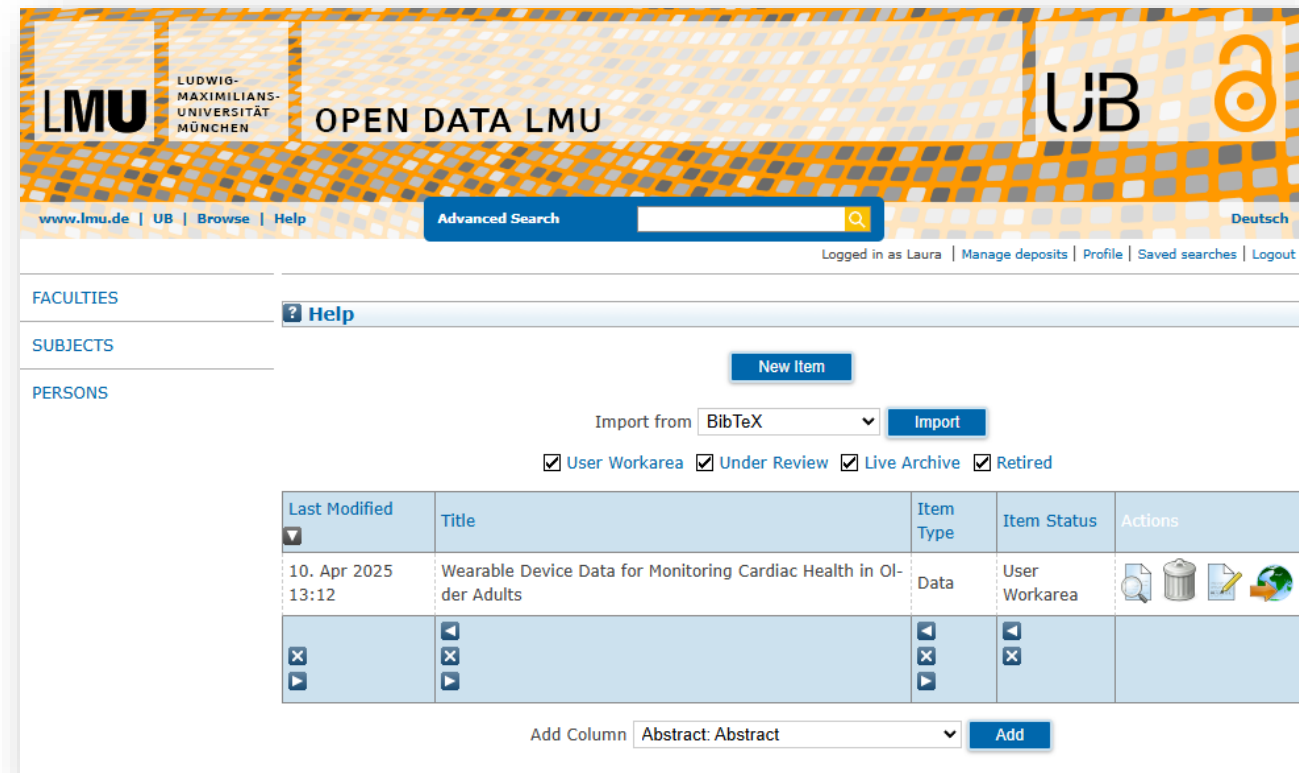
How to publish datasets on Open Data LMU?

Workflow:

1. (Potential consultation with RDM team)
2. Self-upload on Open Data LMU
3. Review phase by RDM team
 - [Feedback via e-mail](#)
4. Publication
 - [Datasets receives a DOI](#)
5. Report DOI back

Where to find more information:

- [Help section](#) on Open Data LMU
- Information platform "[Research Data LMU](#)"

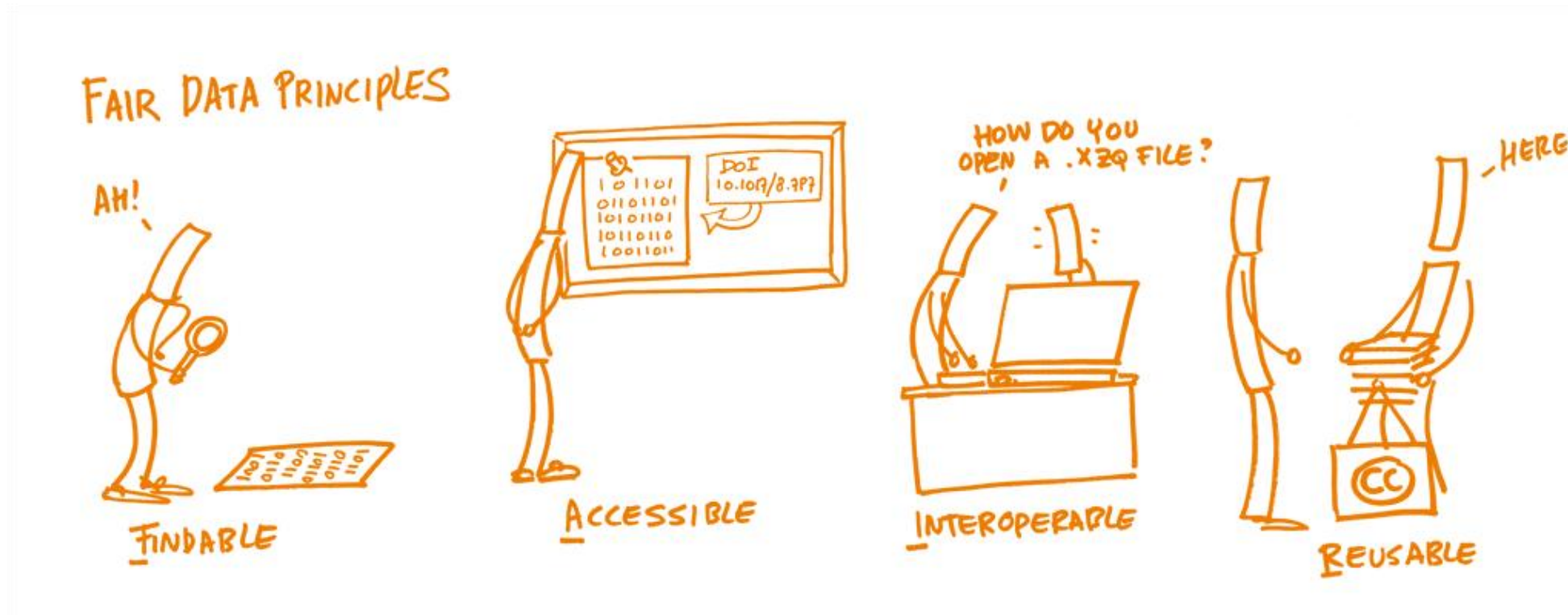


The screenshot shows the Open Data LMU website. The header includes the LMU logo (LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN) and the text 'OPEN DATA LMU'. Below the header is a navigation bar with links for 'www.lmu.de', 'UB', 'Browse', 'Help', and a search bar. The main content area features a sidebar with 'FACULTIES', 'SUBJECTS', and 'PERSONS'. The central area has a 'New Item' button, an 'Import from' dropdown set to 'BibTeX', and an 'Import' button. Below these are checkboxes for 'User Workarea', 'Under Review', 'Live Archive', and 'Retired'. A table displays a list of items with columns for 'Last Modified', 'Title', 'Item Type', 'Item Status', and 'Actions'. The first item is 'Wearable Device Data for Monitoring Cardiac Health in Older Adults', dated '10. Apr 2025 13:12', with 'Data' as the item type and 'User Workarea' as the status. The 'Actions' column contains icons for download, delete, and other functions. At the bottom, there is an 'Add Column' dropdown set to 'Abstract: Abstract' and an 'Add' button.

Publishing on Open Data LMU – Best practices

Background: [FAIR Principles](#)

- FAIR data is not necessarily open!



Format, folder structure and file naming:

We recommend:

- Use open file formats (if possible), e.g., .csv instead of .xlsx
- Group multiple files by areas or topics and compress them (e.g., in an archive file like ZIP)
 - Smaller datasets can be downloaded easier
- Upload ReadMe separately / on the top level of your structure
 - Easier assessment of relevance for potential reuse
- Avoid spaces and special characters in file names
 - Facilitates automated workflows on our side

Data volume:

- Contact RDM team if your dataset encompasses multiple GB

Metadata, description, ReadMe and more:

- Describe your dataset, e.g., the context of the project, documentation of working methods, naming standards for variables, abbreviations and folder structures
 - ReadMe file (e.g., .txt file) -> see also [ReadMe Template](#) by Cornell University
 - Abstract
- Optional: Provide an additional metadata file following a metadata standard (e.g., XML-[DataCite](#) file)
 - Use [DataCite metadata generator](#) and [DataCite best practice guide](#)
- Further content related metadata in the Open Data interface:
 - Provide keywords
 - Link (one) faculty
 - Link one or multiple DDC subjects
- Add a link to the related publication (e.g., journal article)

Publishing on Open Data LMU – Best practices



Legal aspects:

- Check copyright and exploitation rights of third-party users before publication

By publishing, you (implicitly) confer the University Library a permanent non-exclusive right of use.

- Allows us to store the dataset and make it publicly available (also through other portals).
- You are still able and allowed to publish your data elsewhere.
- Choose a license:
 - [Creative Commons Licenses](#)
 - [Open Data Commons Licenses](#)

Licenses are the base for the subsequent use of research data.

















Publishing on Open Data LMU – Best practices

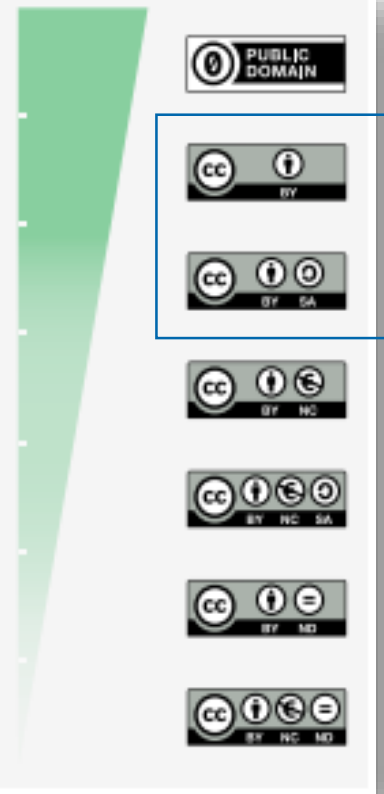
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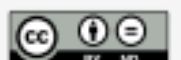

Note: "NC" prevents forms of use that do not appear to be commercial at first glance, but legally are.

Not all CC licenses support Open Access

All license modules can be freely combined (see below). Open Access compliant licenses are CC0, CC BY und CC BY-SA.

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 	CC BY	BY ATTRIBUTION  attribution required (appropriate credit of the author) no restrictions
  	CC BY-SA	BY ATTRIBUTION + SHARE ALIKE  attribution required sharing under the same license
  	CC BY-NC	BY ATTRIBUTION + NON COMMERCIAL attribution required no commercial reuse and distribution → excludes platforms such as Academia, Researchgate or Wikimedia
  	CC BY-ND	BY ATTRIBUTION + NO DERIVATES attribution required no editing and reproduction → no reusability, only dissemination



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RDM information

Our Data publication services include:

- Persistent identifier (PID):
 - DOI
 - ORCID & ROR
- Metadata Services:
 - DataCite Best Practice Guide
 - DataCite Metadata Generator
- Reliable Storage and Backup Strategies

We offer ...

- general support regarding RDM.
- support in planning RDM with DMPs (RDMO).
- advice on data publication options.

Our Team:



Dr. Martin Spenger



Laura Meier



Stefan Gebhardt



Pauline Aldenhövel



LUDWIG-
MAXIMILIANS-
UNIVERSITÄT
MÜNCHEN

UNIVERSITY LIBRARY / DIGITAL SERVICES DEPARTMENT / RDM INFORMATION



Thank you!

Any questions? Feedback on the services?
What are your specific needs?

RDM Information

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