vetmeduni

Research Data Management @ Vetmeduni

Nuts for Research
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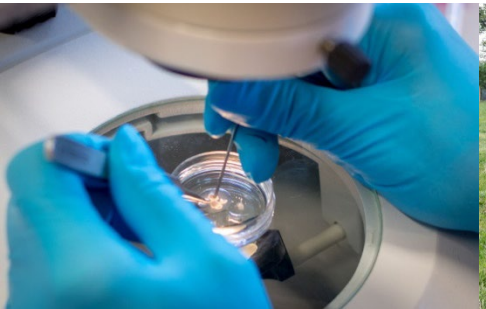
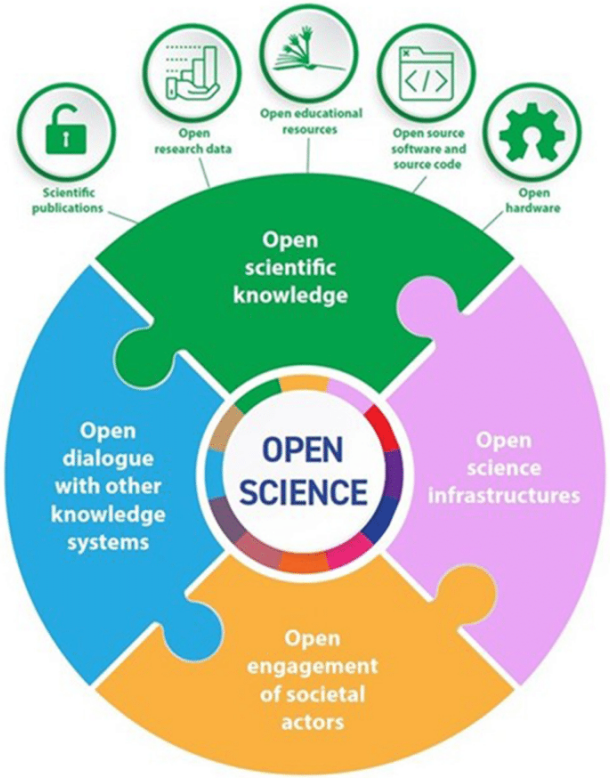



Research Data Management is Open Science

- Scholarly communication and collaboration
- Transparency for scientific practice and taxpayers
- Quality assurance: reproducibility, worthiness of longtime archival
- Increased accessibility of scientific data for practitioners and public
- Inclusivity: Involvement of people of all backgrounds in Science



Components of open science. Source: UNESCO, 2021

“As open as possible, as closed as necessary.”

The FAIR Principles

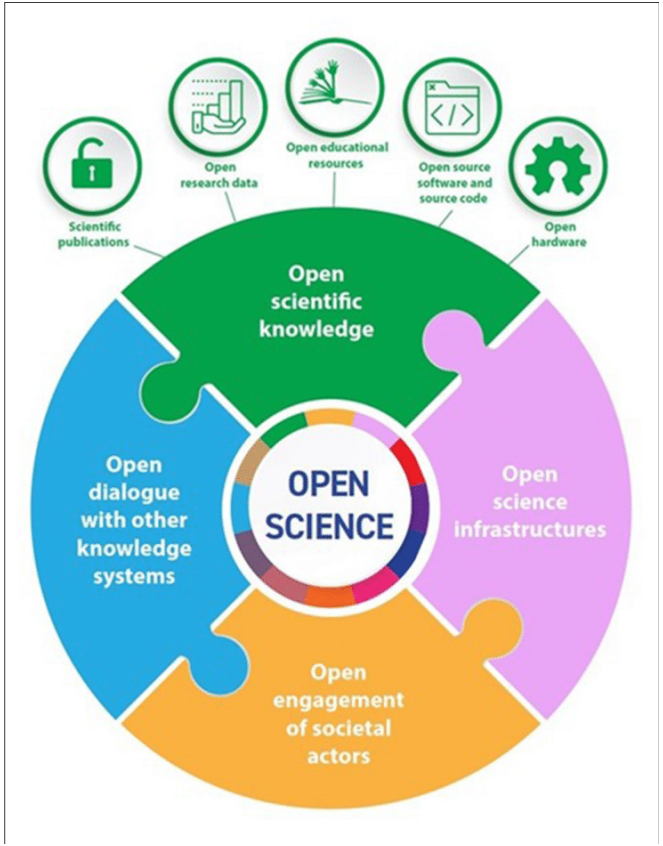
- **Findable** = e.g., Uploaded to a repository, has a Permanent Identifier (ex. DOI)
- **Accessible** = e.g., open access, closed access but metadata are available
- **Interoperable** = Machine actionable, compatible with other systems (i.e., non-proprietary formats)
- **Reuseable** = published with a license that allows reuse (ex. Creative Commons licenses)

- Pragmatic, not ethical guidelines

„The FAIR Principles“ EOSC Support Office Austria. 10.5281/zenodo.14002626

Research Data Management is Good for Science and Scientists

- Brings clarity and organization to an ever-changing data ecosystem
- Increases visibility of publications, outputs
- Promotes secure and ethical data handling
- Protects against loss of knowledge due to benign human error, natural disaster, digital rot, etc.



Components of open science. Source: UNESCO, 2021

Research Data Management is Good for (Veterinary) Medicine

- Facilitates responses to public health crises
- Accelerates innovation and exchange
- Aids in development of tools, e.g., molecular modeling
- Saves resources and time

Mol* (*/'molstar/*) is a modern web-based open-source toolkit for visualisation and analysis of large-scale molecular data

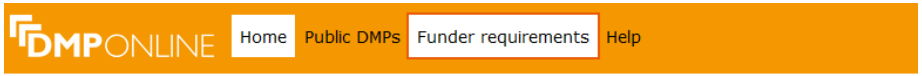
Photo: https://molstar.org

Research Data Life Cycle

[Harvard Biomedical Data Lifecycle]

Plan & Design

- What data?
- How and how much data will be collected?
    - Who will have access to it?
    - Where will it be saved <u>during</u> the project?
    - Where will it be archived <u>after</u> the project?
        - How will data be made FAIR?
            - Ethical, Legal aspects, Institutional, Funder requirements
                - Associated costs



Plan to make data work for you

Data Management Plans that meet institutional funder requirements.

https://dmponline.dcc.ac.uk/

Collect & Create

What is research data?

"Research data encompasses all information required to support or validate the origin, history, outcome, observations, or findings of a research activity. These are created over the course of scientific projects, e.g. through digitisation, records, experiments, source research, measurements, surveys, or interviews. Research data have different characteristics and can go through different phases over their life cycles (e.g. raw data, processed data, released data, published data)." –Research Data Management Policy, Meduni Graz

https://elabftw.vetmeduni.ac.at/

Documentation & Metadata

Metadata = Information describing a data set

- Provides context for other users
- When possible, use a metadata standard
- Or create a „Readme“ document to describe the logic of the metadata for others

https://data.research.cornell.edu/data-management/sharing/readme/

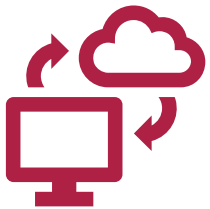
DublinCore

PREMIS PRESERVATION METADATA MAINTENANCE ACTIVITY

Analyse & Collaborate

- Data Storage and Access among Research Group during a project
    - Not only on personal computer!

Suggestions: External hard drive, local server, cloud-based(e.g., [at the moment] Vetcloud)



Evaluate & Archive

- **If data evaluated as worthy of archival, save it in one or more trusted repositories**
  - Phaidra- institutional repository
  - Subject or general repository

Remember:

- "As open as possible, as closed as necessary"- if ethics and intellectual property allow, share with license, ex. Creative Commons CC BY
- Save the item with rich metadata to provide context to the data set for other users
- Save data for 10 years

Share & Disseminate

- Data set published in a repository with persistent identifier (ex. DOI)
- DOI for data set linked to a published article, book, etc.
- Share via Social Media

Publish & Reuse

- Study of data published, hopefully Open Access
- Article and data are available for reuse-a central goal of Research Data Management

Open Science Concept

Data Literacy -The competency to engage with data and the practices of RDM in a meaningful way	**Data Governance** -The combined processes, practices, standards, policies & strategies that support researchers—both individually and collectively—in storing, managing, sharing, and reusing data.
Data Stewardship/Management -The responsible oversight of data practices to ensure quality, integrity, security, and proper use throughout the data lifecycle	**Data Practice** -The methods and routines used to collect, manage, analyze, and use data effectively and ethically in research & organizational settings

The Path Forward…

Literacy

- Courses e.g., Licenses, Phaidra
- 1-on-1 consults

Practices

- Survey of current practices & needs
- Evidence-based decision-making

Management

- Hiring Data Stewards
- Unifying IT infrastruct-ures

Governance

- Policy for Open Science @ Vetmed
- Colab w/ other Depts

Next Steps

- **Survey of status quo**: What are the current practices regarding e.g., storage, archival, data management plans, software or infrustructure that is used, etc.
- **Needs assessment**: What do researchers need in order to do FAIR RDM successfully?
- **RDM Policy Draft**
- **Concept for Data Literacy Capacity Building**
- **Concept for Data Steward Implementation**

Support on Campus

Open Science Team @ University Library

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Between now and 2027: Data Stewards will join the OS Team!