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Module I: Introduction to research data management

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Agenda

- A bit of context
- What is research data management?
- UiO and funder requirements
- Aspects of research data management

Rules for today

- Interrupt me if I speak too fast!
- Feel free to write your questions in the chat, we will answer them at the end of the session
- We will be using menti.com – Go to menti.com and use code **4700 2819**

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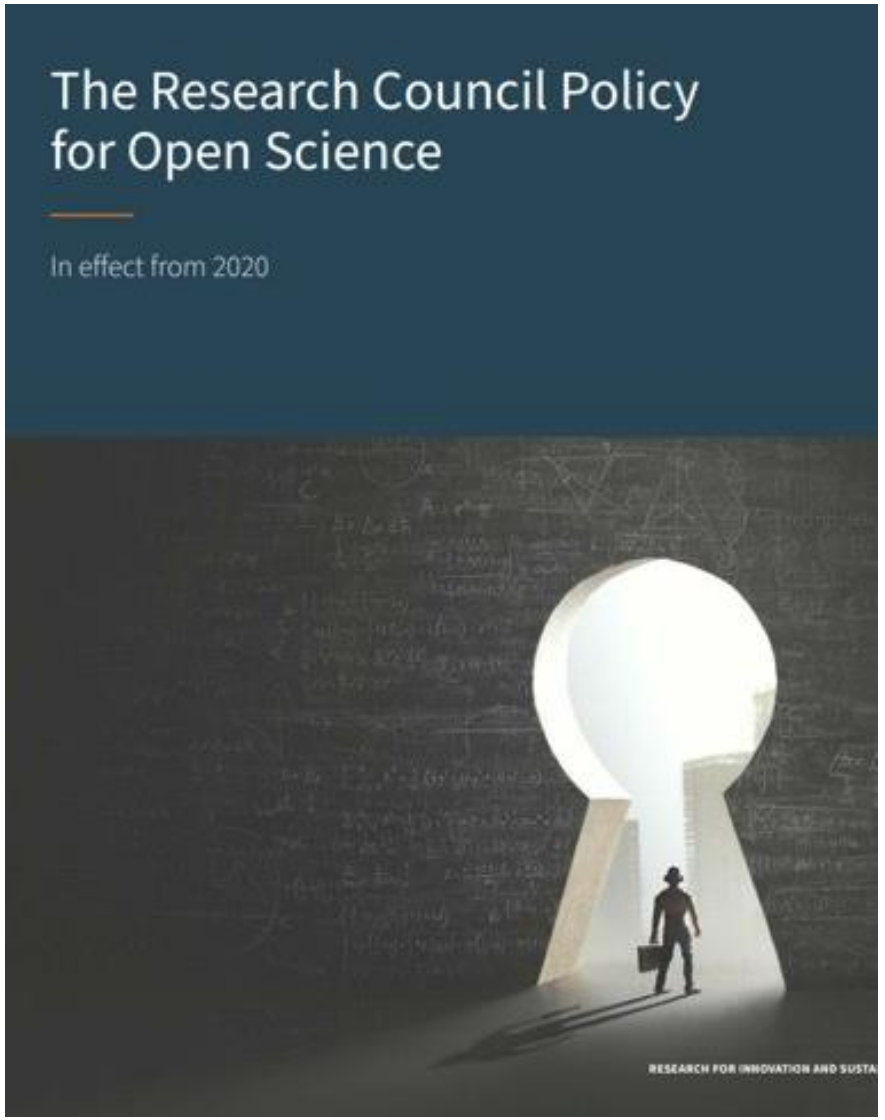
- Which faculty or department do you work in?

A bit of context

Open Research / Open Science

“Open science means transparency and knowledge-sharing in research processes to make knowledge accessible across academic groups, sectors and national boundaries. The concept of open science encompasses the entire research process […]”



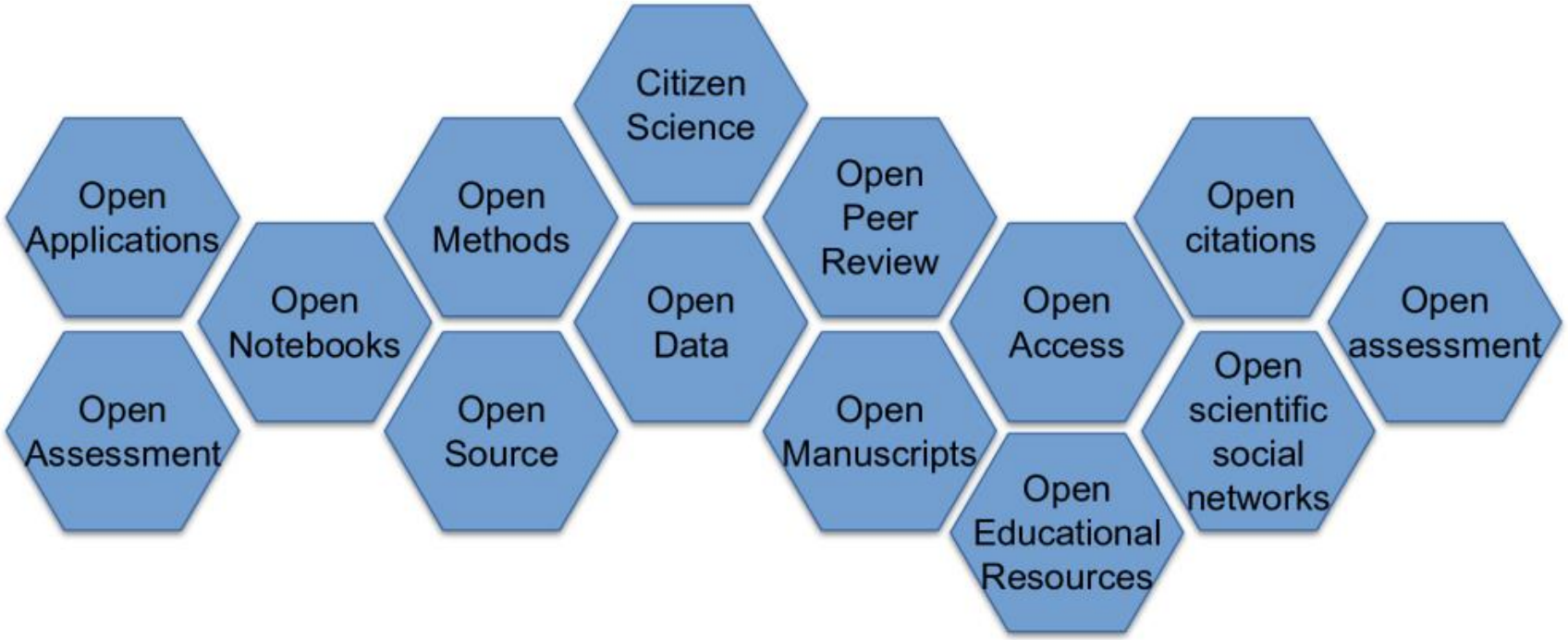
Norwegian Research Council

Internationally supported

"**Open Science** is becoming the modus operandi for carrying out research and innovation by **sharing knowledge, data and tools** as early as possible, in open collaboration with all relevant knowledge actors and society."

ec_rtd_horizon-europe-strategic-plan-2021-24.pdf (europa.eu)

Open science includes



by Alexander R. Jensenius

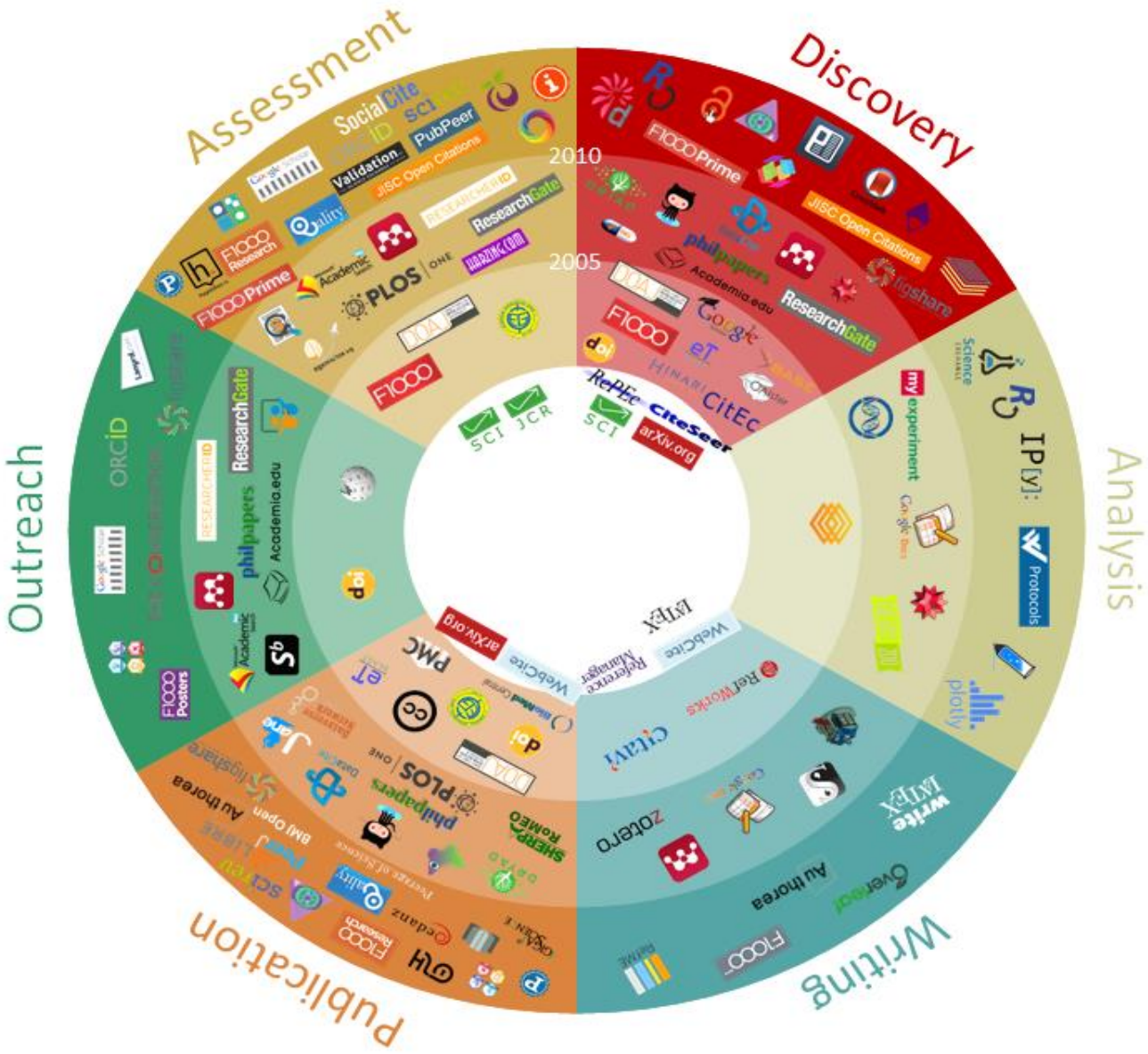
Why open science?

- Transparency
- Knowledge sharing
- Better validation and reproducibility
- Reduce academic misconduct
- Increased quality and impact
- Foundations for others to build upon
- Demanded by funders...

RITMO / Centre for Interdisciplinary Studies in Rhythm, Time and Motion

"My main argument for opening all parts of the process is that it is "sharpening" the research process. You cannot be sloppy if you know that it will be exposed".

Alexander R. Jensenius, 2020



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Source: 101 Innovations in Scholarly Communication. CC BY https://innoscholcomm.silk.co/

What is research data management?

A Definition

"Research data management concerns the organization of data, from its entry to the research cycle through to the dissemination and archiving of valuable results. It aims to ensure reliable verification of results and permits new and innovative research built on existing information."

Whyte, A., Tedds, J. (2011)

From RDMKit

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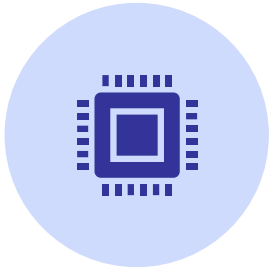
- What kind of research data are you working with?
- What kind of problems have you had working with your data?

What is research data?

Research data are representations of observations, objects, or other entities used as evidence of phenomena for the purposes of research or scholarship.

Borgman, C. L. (2015)

Observational data
results from recognising, noting, or recording facts or occurrences of phenomena



Computational data
products of executing computer models, simulations, or workflows

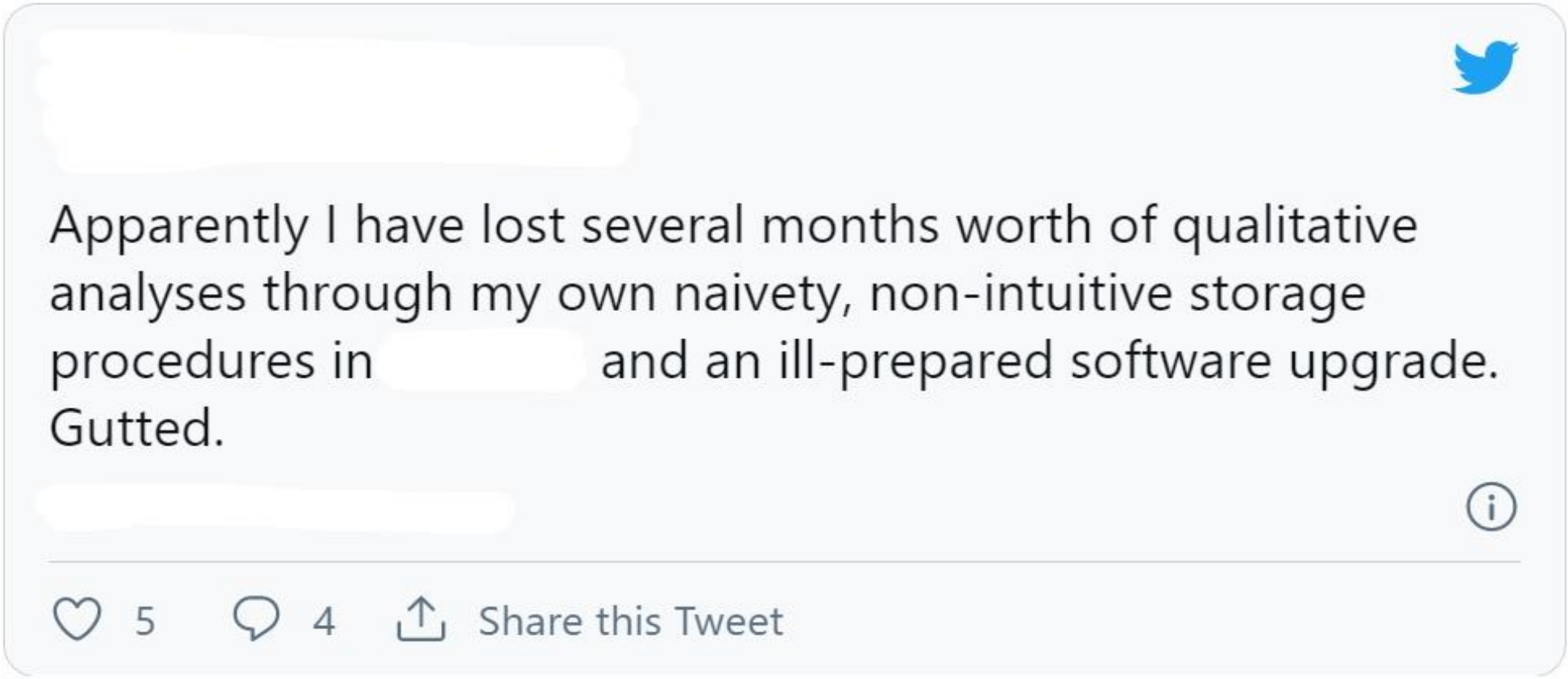
Experimental data
results of procedures in controlled conditions to test or establish hypotheses or to discover or test new laws

Records
records of almost any phenomenon or human activity, can be treated as data for research

Why is research data management (RDM) important?

- Efficiency
- Awareness of requirements
- Policies, regulations, and where to find support and help
- Quality, credibility and reproducibility
- Sharing and transparency

Save time!


Apparently I have lost several months worth of qualitative analyses through my own naivety, non-intuitive storage procedures in and an ill-prepared software upgrade. Gutted.
5
4
Share this Tweet

Transparency

"When the researchers published their 2020 update, they posted the data from their 2012 paper for the first time. Publicly sharing data was once a rarity in science but is slowly becoming more commonplace amid calls for greater transparency."

https://www.buzzfeednews.com/article/stephaniemlee/dan-ariely-honesty-study-retraction

Reproducibility

"For my first work-related tweet of 2020, I am totally bummed to announce that we have retracted last year's paper on enzymatic synthesis of beta-lactams. The work has not been reproducible," she tweeted.

"It is painful to admit, but important to do so. I apologize to all. I was a bit busy when this was submitted and did not do my job well."

https://www.bbc.com/news/world-us-canada-50989423

UiO and funder requirements

Research data at UiO must:

- be made openly available for reuse
- have a **data management plan**
- have metadata
- be archived in a responsible manner
- be equipped with licenses for access, reuse and redistribution
- be made available as early as possible
- be made openly available, but costs for distribution can be covered

Source: https://www.uio.no/english/for-employees/support/research/research-data-management/policies-and-guidelines/

Data Management Plans (DMP)

- Must assess the need to develop a data management plan in relation to all projects awarded funding. If you decide that a data management plan is not needed, you must provide an explanation.*
- The **Data Management Plan (DMP)** must be delivered in connection with the revised grant application.
- RCN will request a final version of the data management plan in connection with the final report of the project.

**Research Council of Norwy will soon require that all projects have a Data Management Plan*

HORIZON EUROPE

Open Science across the programme

Open Science

Mainstreaming of open science practices for improved quality and efficiency of R&I, and active engagement of society

Mandatory immediate Open Access to publications: beneficiaries must retain sufficient IPRs to comply with open access requirements;

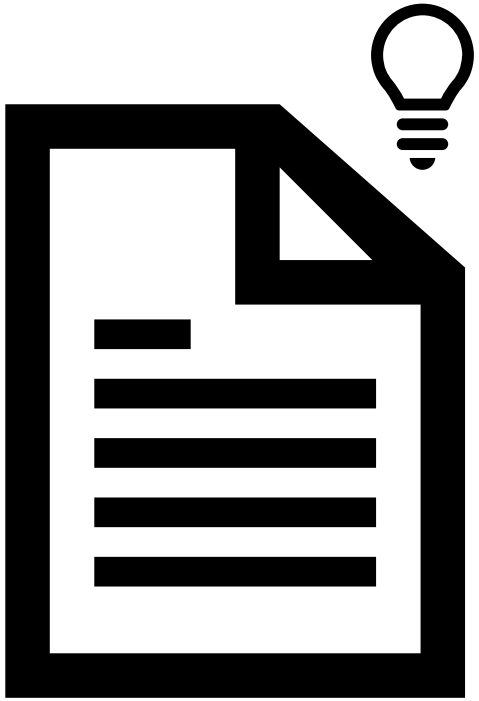
Data sharing as 'open as possible, as closed as necessary': mandatory Data Management Plan for FAIR (Findable, Accessible, Interoperable, Reusable) research data

- Work Programmes may incentivize or oblige to adhere to **open science practices** such as involvement of citizens, or to use the **European Open Science Cloud**
- Assessment of open science practices through the **award criteria** for proposal evaluation
- Dedicated support to **open science policy actions**
- **Open Research Europe** publishing platform

European Commission

The Data Management Plan (DMP)

- Is a living document that accompanies the research project;
- Specifies the kind of data that will be generated;
- Outlines how the data will be described;
- Explains where the data will be stored;
- Conveys whether and how the data can be shared.



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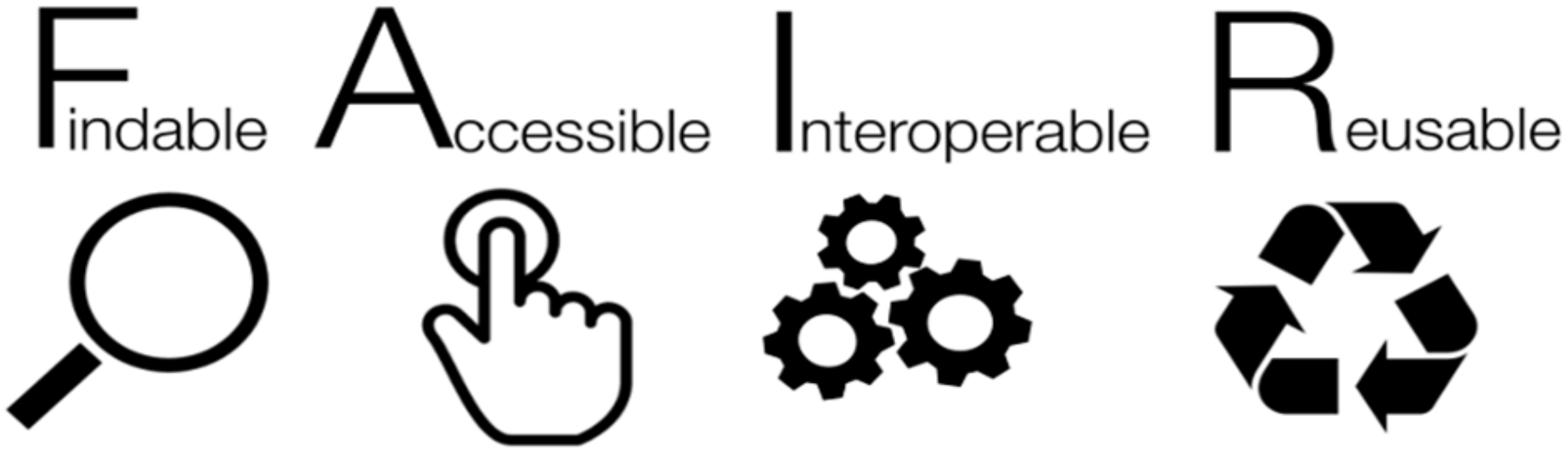
- On DMPs

Contents of a Data Management Plan

- Types of data
- Collection and Analysis
- Storage
- Classification
- Organization
- Roles and Responsibilities
- Documentation and Metadata
- Long-term Storage and Archiving
- Sharing and Reuse
- Dissemination
- Legal and Ethical Requirements

RDMKit

Plan vs. Planning



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https://www.force11.org/group/fairgroup/fairprinciples

Services and tools for RDM support:

- Research support and IT staff at your faculty/institute
- Subject librarian for your discipline
- Research data management website
- Digital Scholarship Center (DSC)
- Norwegian Centre for Research Data (NSD)

Common questions we get

Privacy!!!!!

Is this DMP good enough?

Where can I store (red, yellow, green) data?

What kind of archive should I use? Does UiO have an archive?

Metadata?!?!

Open Access

Norwegian version of this page

Open Access

- Self-archiving
- Publishing deals and discounts
- Publish Open Access

It is the University of Oslo's goal that research results shall be openly available to individuals, the public sector, trade and industry, and the global research community.

Publishing Open Access?

How do I publish Open Access, and how do I avoid fraud?

Self-archiving

How to self-archive in DUO research archive via Cristin. Information on self archiving and other archives.

Publishing deals and discounts

UiOs deals and discounts for Open Access publishing.

Research Data Management

The UiO policy and guidelines. Help and advice on managing research data.

Requirements for Open Access

About Open Access

What is Open Access? Which advantages does it give you? The paths to Open Access.

Home About Getting Started Blog Organizer Tools ...

Journal Clubs

We now have journal clubs set up in many universities. Please use the search tool below to find out if there's one in your area:

UiO

UiO

Welcome

Our journal club is open to both staff and students at UiO across all departments. Everyone is welcome to join us - whether you are an enthusiast, a skeptic, or a cautious explorer. We plan to kick off our journal club in spring 2021. Feel free to get in touch if you are interested to participate or contribute!

Our mission

- provide an informal and friendly platform for discussions about meta scientific topics
- help each other get familiarized with open science practices (e.g., pre-registrations, sharing data, sharing preprints, etc.)
- connect students and researchers from various disciplines who are interested in meta science.

Universitetet i Oslo
osf.io/mvx54
Z collection
? timo.b.roettger@gmail.com
Timo B. Roettger

Carpentry: Training on foundational coding and data science skills

At University of Oslo (UiO), Carpentries workshops based on Software Carpentry, Data Carpentry, and Library Carpentry lessons are offered to facilitate sharing and re-using of code and data among graduates and researchers from all faculties and units.

Upcoming workshops

Carpentry Workshop: Writing and Publishing on the Web Using Github

Published Nov. 3, 2021 10:00 AM

Data Carpentry for Social Sciences and Humanities Using R

Published Nov. 22, 2021 9:00 AM

Upcoming sessions…

- Data Management Planning
  13/10 9:00-10:30
- Data Organization, Metadata and Documentation
  21/10 9:00-10:30
- Data Classification and Storage Selection
  22/10 9:00-10:30
- Sharing and Archiving Research Data
  26/10 9:00-10:30
- Data Discovery and Reuse
  27/10 9:00-10:30

Sign up here:

https://www.ub.uio.no/english/courses-events/courses/other/research-data/

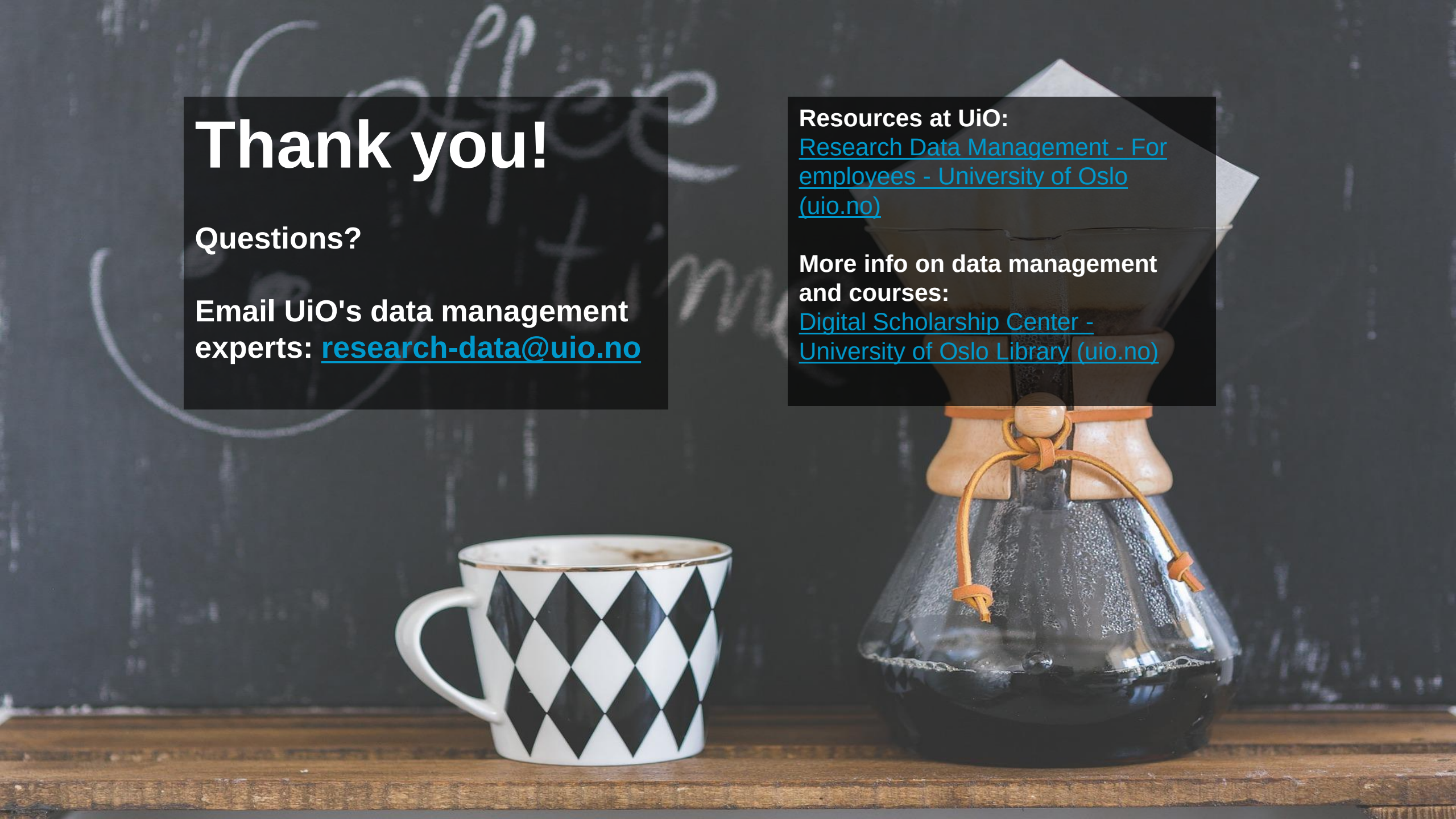
Thank you!

Questions?

Email UiO's data management experts: research-data@uio.no

Resources at UiO:
Research Data Management - For employees - University of Oslo (uio.no)

More info on data management and courses:
Digital Scholarship Center - University of Oslo Library (uio.no)



Menti – Questions?

Go to menti.com and use code 7764 4328

Sources:

Anne Bergsaker og Live Håndlykken Kvale. Datahåndtering, kurs 25.9.2019

CESSDA. Data management expert guide. https://www.cessda.eu/Training/Training-Resources/Library/Data-Management-Expert-Guide

Christine L. Borgman. 2015. Big Data, Little Data, No Data: Scholarship in the Networked World. The MIT Press.

Forskningsrådets policy for åpen forskning https://www.forskningsradet.no/nyheter/2020/slik-skal-forskningsradet-jobbe-for-apen-forskning/

Forskningsrådet. Forskningsrådets policy for åpen tilgang til forskningsdata: https://www.forskningsradet.no/forskningspolitisk-radgivning/apen-forskning/apen-tilgang-til-forskningsdata/

OpenAire. Guides for researchers: How to comply with h2020 mandate – for research data. https://www.openaire.eu/how-to-comply-to-h2020-mandates-for-data

University of Oslo. Policies and guidelines for research data management https://www.uio.no/english/for-employees/support/research/research-data-management/policies-and-guidelines/index.html

Useful Links

- RDMkit (elixir-europe.org)
- RDA | Research Data Sharing without barriers (rd-alliance.org)

And a fun video about research data management:

https://www.youtube.com/watch?v=N2zK3sAtr-4