

How to better manage your data – and thereby enrich research.

Lecture in Scientific Writing and Presenting
15th January 2024

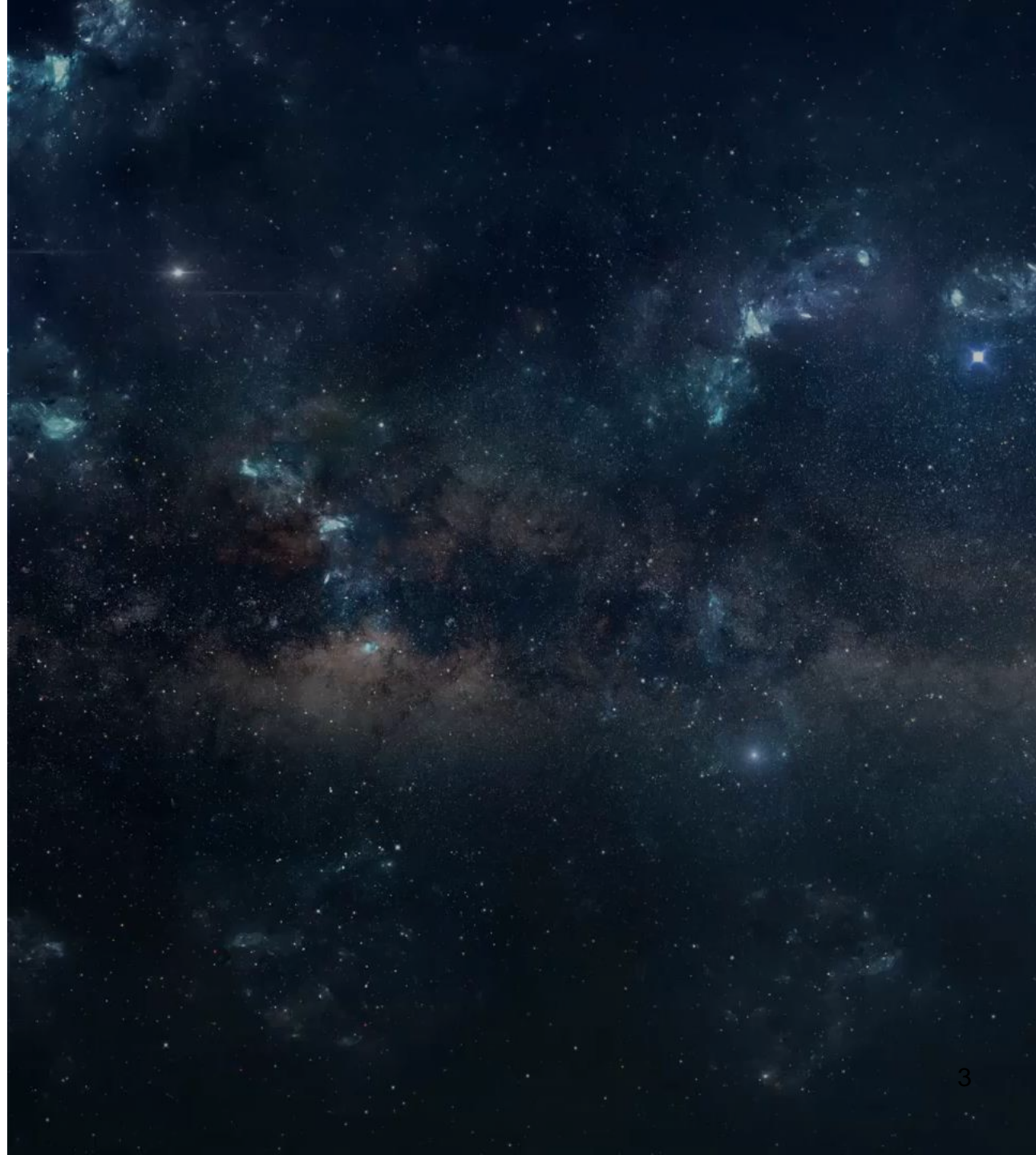


Introduction

The age of 'big data'

'The rising tide of data –
nearly as many digital bits as
there are stars in the
universe.'

Source: IDC's Digital Universe Study 2014
<https://www.emc.com/leadership/digital-universe/2014iview/executive-summary.html>

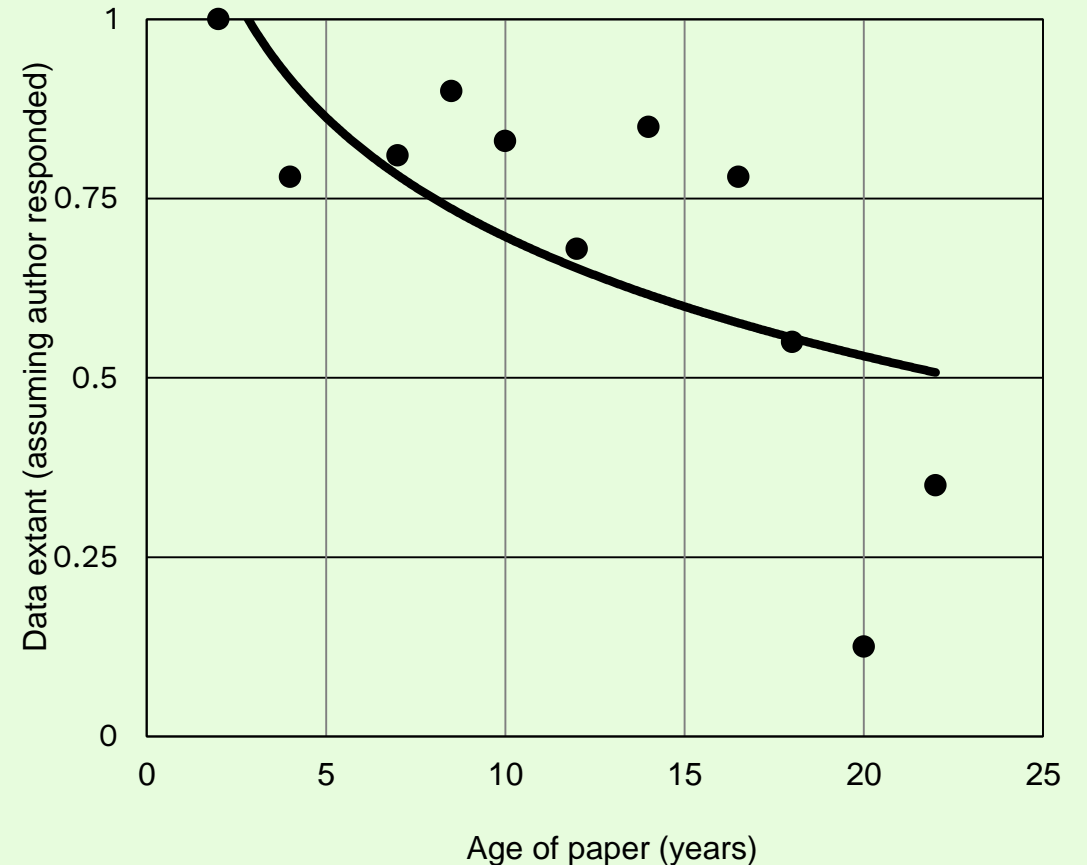


Availability of research data over time

- Data being lost are estimated to increase by **17% in every** year after publication.
- Find a working e-mail address for the first, last, or corresponding author fell by **7% per year**.
- Overall, we only received 19.5% of the requested data sets, and only 11% for articles published before 2000.

Missing data

As research articles age, the odds of their raw data being extant drop dramatically.



Vines, Timothy H. et al. Current Biology, 2014, Volume 24, Issue 1, 94-97

National research data landscape, Germany

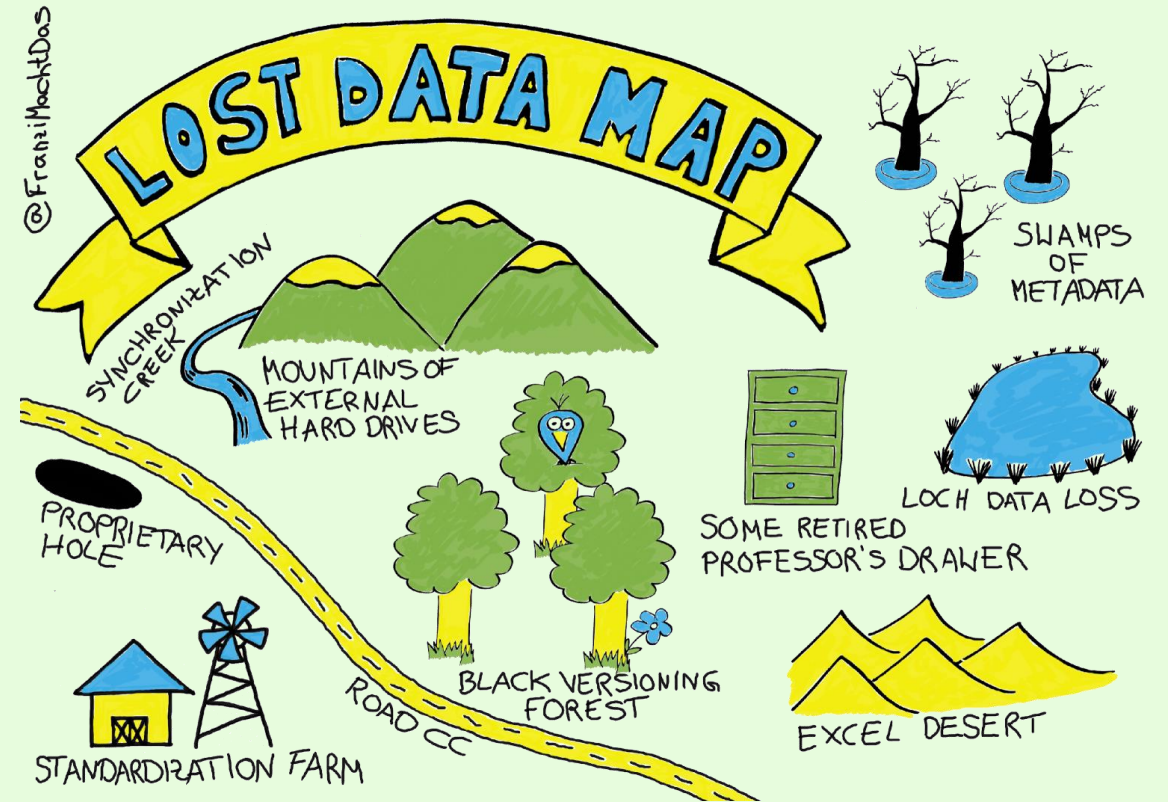


Modified after <https://www.dfg.de/foerderung/programme/nfdi/informationmaterialien/index.html>

Good Scientific Practice?

Research Data Management (RDM) is a process that involves the **active organization** and **maintenance of data** throughout the research process.

RDM further contains **the suitable archiving** of research data at the project's completion. Thus, it is an ongoing activity throughout the data lifecycle!



Data should be ...

Findable



Accessible



Interoperable



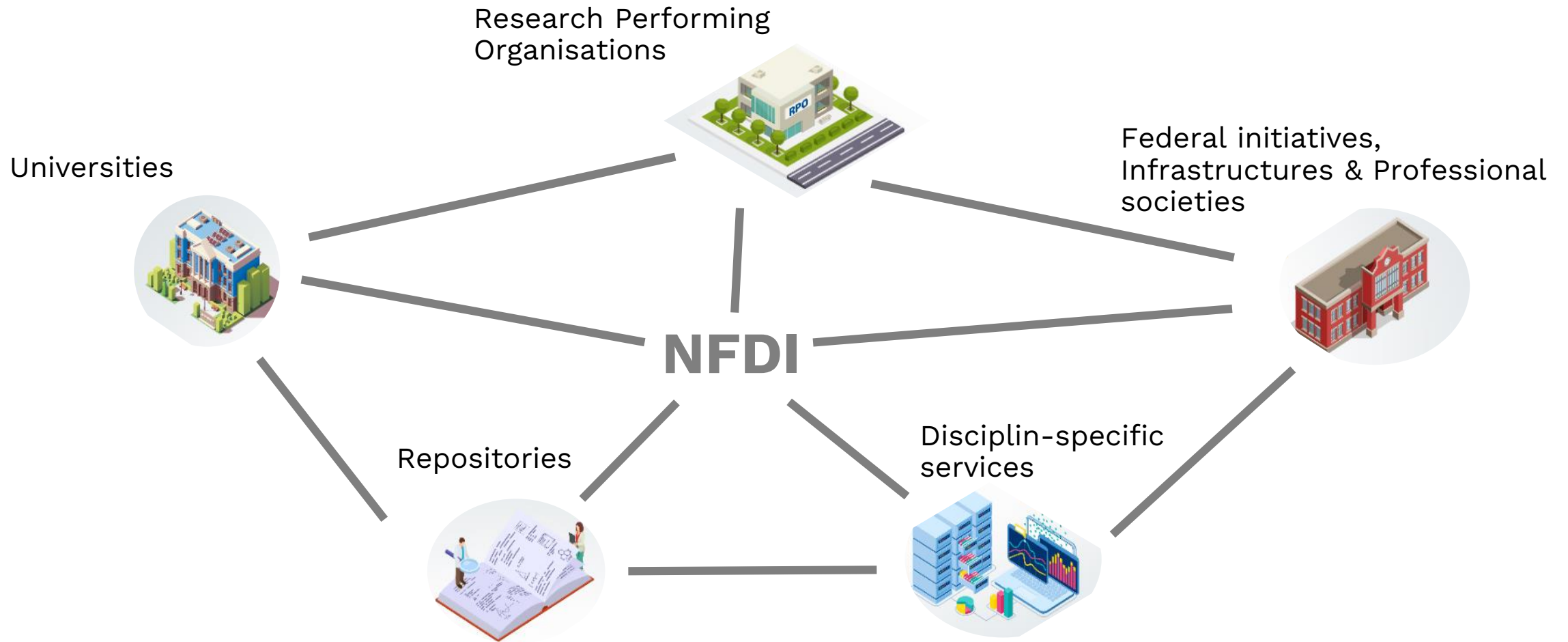
Reusable



Data should be as open as possible as closed as necessary

RDM should be done according to these principles!

National research data landscape



Modified after <https://www.dfg.de/foerderung/programme/nfdi/informationmaterialien/index.html>

Structure of the NFDI

In 2023

27 Consortia

> 200 member organisations

www.nfdi.de

NFDI e.V. Association - Directorate -				
Data Plant	GHGA	NFDI4Biodiversity	NFDI4Cat	NFDI4Chem
NFDI4Culture	NFDI4Health	NFDI4Ing	KonsortSWD	BERD@NFDI
DAPHNE4NFDI	FAIRmat	MaRDI	NFDI4DataScience	NFDI4Earth
NFDI4Microbiota	NFDI4MatWerk	PUNCH4NFDI	Text+	NFDI4Memory
NFDI4Objects	NFDI4BIOIMAGE	NFDI4Energy	NFDI4Immuno	FAIRAgro
NFDIxCS	Base4NFDI			

The COVID-19 Pandemic



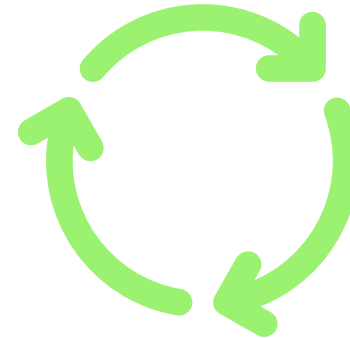
The corona pandemic affected
diverse aspects of human life.

Decision-makers did strongly
depend on reliable data.



**NFDI 4
BIODIVERSITY**
BIODIVERSITY, ECOLOGY & ENVIRONMENTAL DATA

NFDI4HEALTH
NATIONALE FORSCHUNGSDATENINFRASTRUKTUR
FÜR PERSONENBEZOGENE GESUNDHEITSDATEN



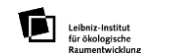
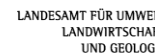
NFDI4Earth

KonsortSWD.
Consortium for the Social, Behavioural,
Educational, and Economic Sciences

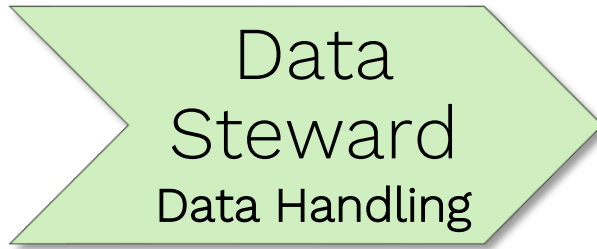
Mission Statement

Stakeholders from science, politics and nature conservation need reliable data in order to be able to develop better contributions to the conservation of global biodiversity.

In our partner network, we work to make diverse and high-quality biodiversity data available.



Jobs in RDM



Programming
Data Management
Software & IT Tools

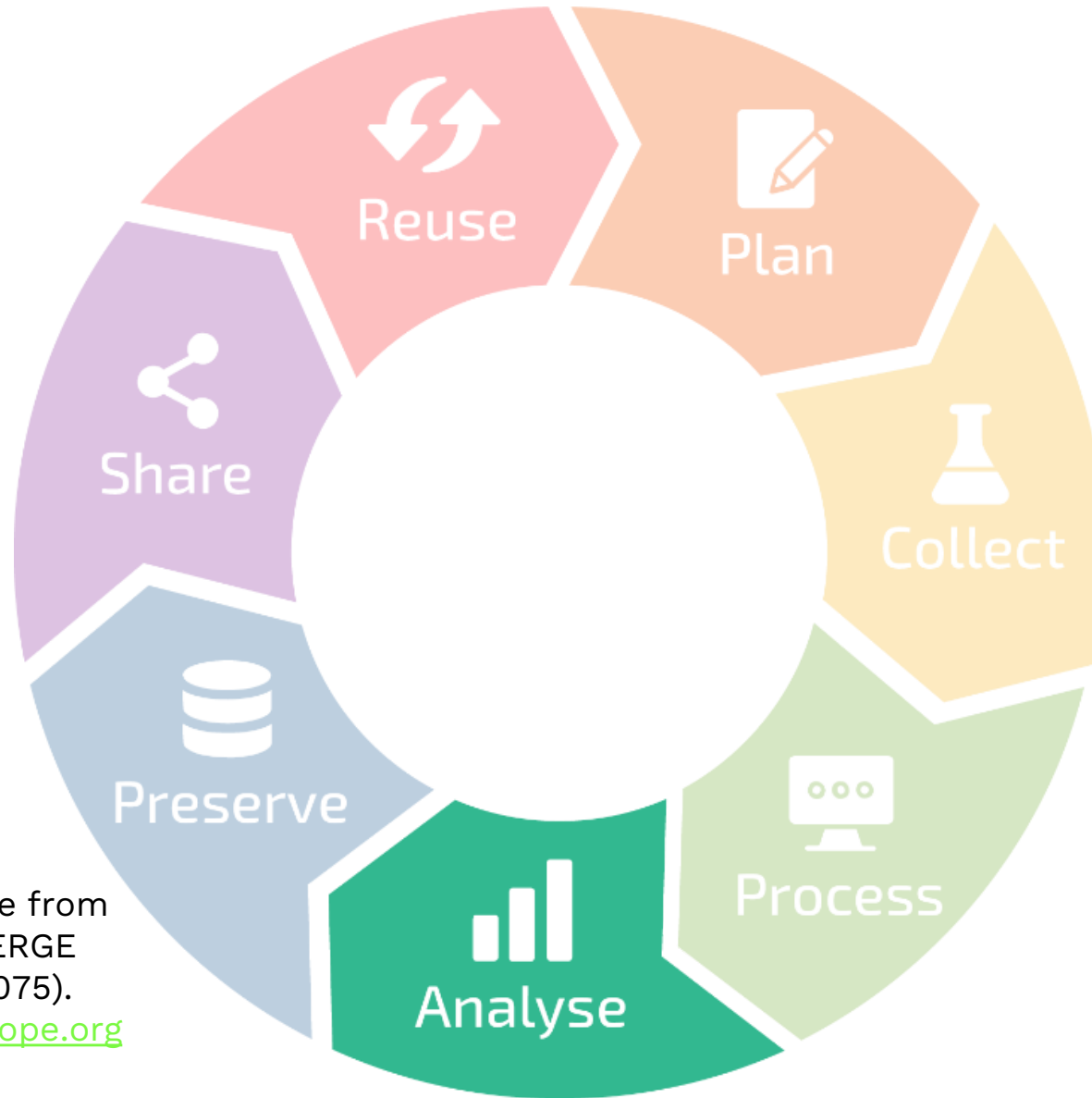


Mathematics & Statistics
Domain Expertise
Computer Science



‘[...] the cross-discipline training program “Data Train” of the “U Bremen Research Alliance” teaches competencies in data literacy, research data management, and data science for doctoral researchers.[...]’





ELIXIR (2021) Research Data Management Kit. A deliverable from the EU-funded ELIXIR-CONVERGE project (grant agreement 871075).
URL: <https://rdmkit.elixir-europe.org>