

„Introduction to JGU’s research data management services, the FAIR data principles and the rules for good research practice with regard to research data.“

November, 20th 2025

Esther Reineke, Tina Rotzal und Dr. Anne Vieten

JOHANNES GUTENBERG
UNIVERSITÄT MAINZ

JG|U

TODAY'S PROGRAM

- 09:00 - 09:30: **„Introduction to JGU's research data management services, the FAIR data principles and the rules for good research practice with regard to research data.“** Dr. Anne Vieten, Esther Reineke, Tina Rotzal
- 09:30 - 10:00: **„Managing research data with RDMO.“** Sarah Wettermann
- 10:00 - 10:30: **„Gutenberg Open Science: Das Open-Access-Repository für Publikationen und Forschungsdaten an der JGU.“**Karin Eckert
- 10:30 - 10:45: Break
- 10:45 - 11:15: **„The iRODS Research Data Archive of the JGU: Introduction to its usage“** Dr. Jörg Steinkamp
- 11:15 - 11:45: **„From Paper to Digital: Introduction to the Electronic Lab Notebook eLabFTW“** Lukas Hellmann
- 11:45 - 12:15: **„Gutenberg Images - die komfortable, flexible Bilddatenbank der Universitätsbibliothek Mainz.“**

THE TEAM OF RESEARCH DATA EXPERTS

- **Dr. Anne Vieten** (Department for Research and Technology Transfer): General RDM aspects, RDM-requirements of funders, DMPs, data publication ...
- **Dr. Jörg Steinkamp** (Data Center): iRODS data archive, data archiving, technical RDM aspects, GitLab, ...
- **Sarah Wettermann** (Data Center): Research Data Management Organiser (RDMO) – DMPs, technical RDM aspects
- **Karin Eckert** (University library): Gutenberg Open Science, metadata, data publication, ...
- **Esther Reinecke and Tina Rotzal** (University library): Good research practice, academic integrity

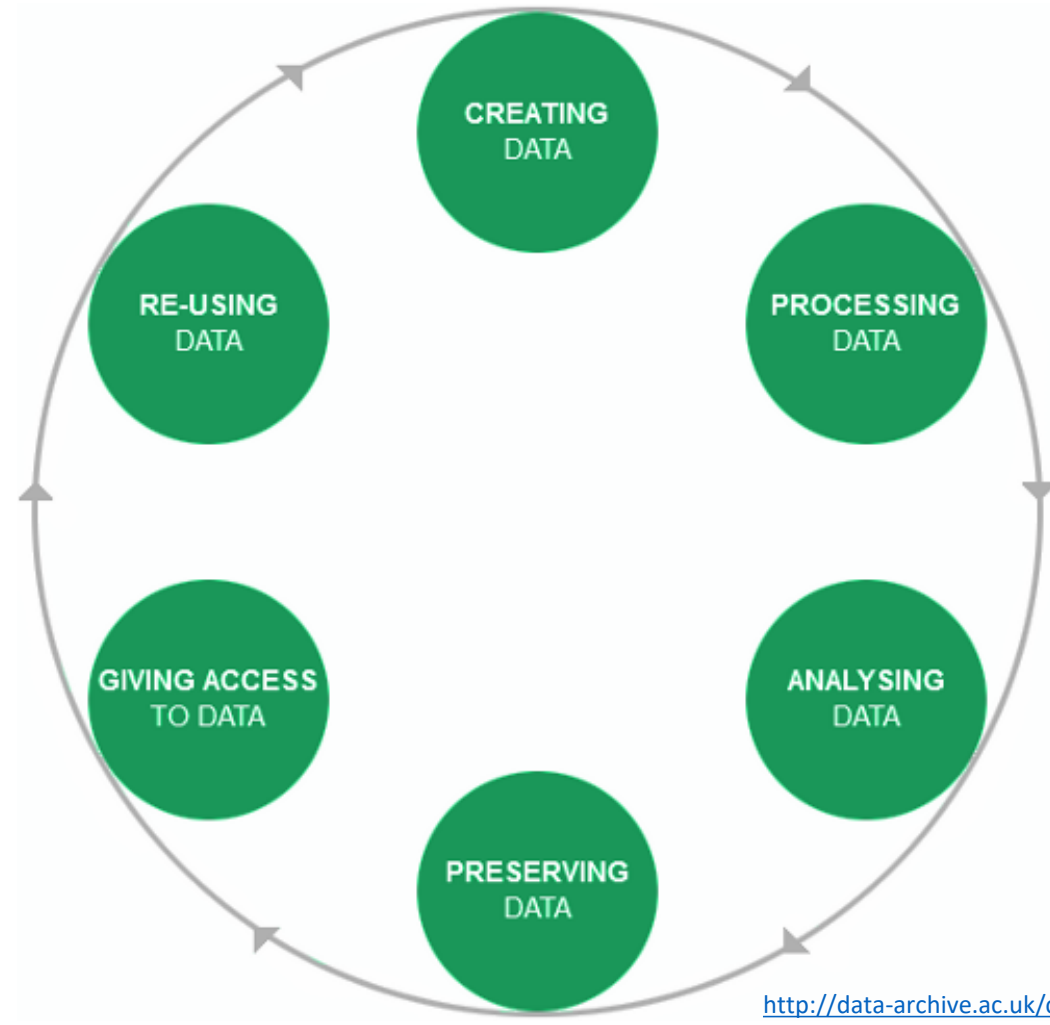
Associated to the Team:

- **Lukas Hellmann** (Department for Biology): Electronic Lab Notebook eLabFTW

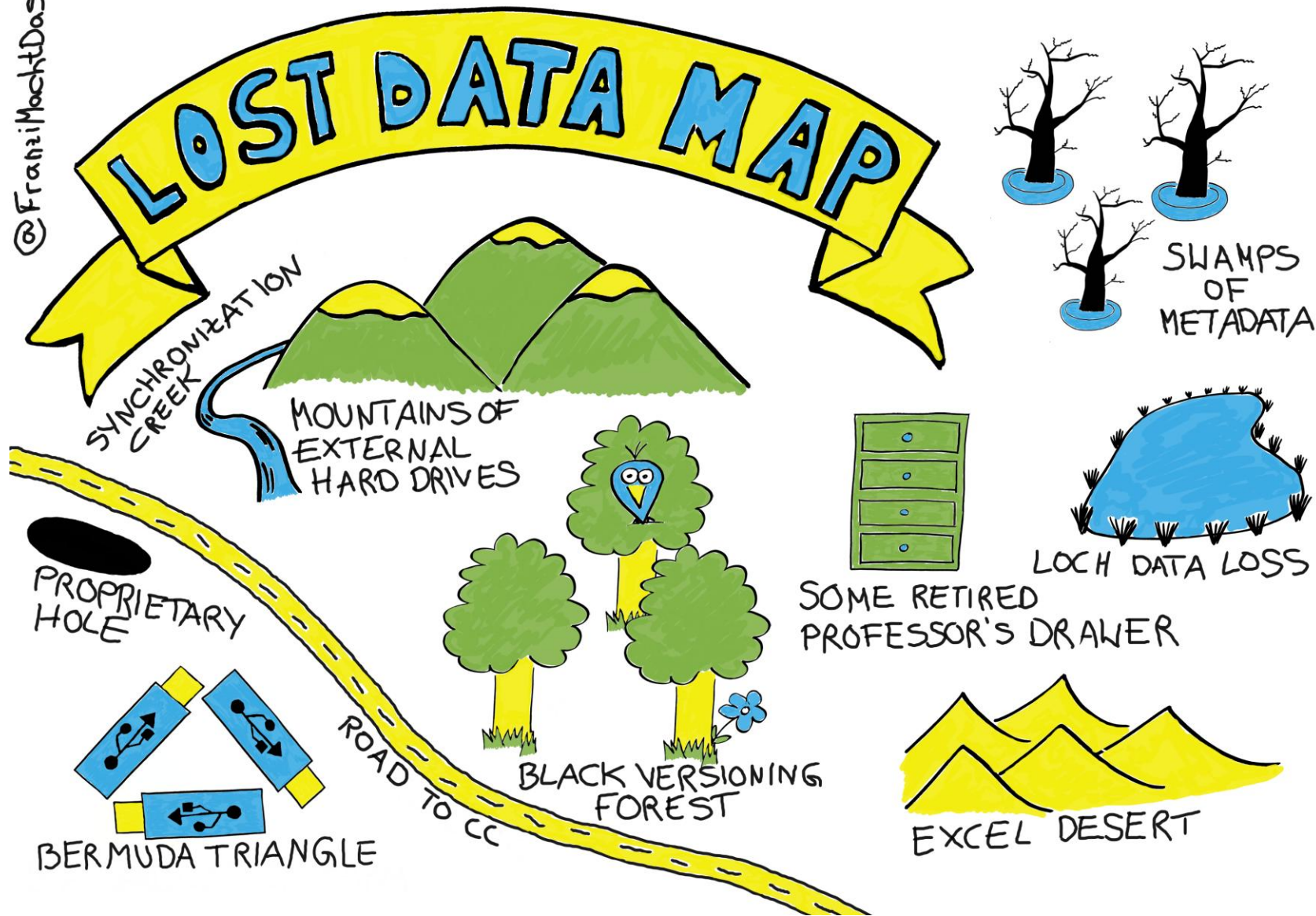
Contact: forschungsdaten@uni-mainz.de; <https://www.forschungsdaten.uni-mainz.de/>

THE RESEARCH DATA LIFE CYCLE

... describes all steps of
research data management



<http://data-archive.ac.uk/create-manage/life-cycle>
http://www.open.ac.uk/blogs/the_orb/?p=52



RDM CONSULTING SERVICES AT JGU

RDM in general

- RDM-basics
- Requirements of third-party funders for RDM and open data
- Creation of data management plans and RDMO
- Support in the creation of project-specific FDM policies
- Technical RDM questions

Contact: forschungsdaten@uni-mainz.de

Data publication and archiving

- JGU repositories
- Archiving data in iRODS
- Metadata standards
- Requirements for permanent archiving
- Data publication (Open Data)
- Persistent addressing (DOI, URN, etc.)
- Author identification via ORCID
- Interdisciplinary visibility for research data
- Data citation

TRAININGS AND EVENTS

Training courses: <https://www.forschungsdaten.uni-mainz.de>

- Requirements of third-party funders for RDM and Open Data
- RDM introduction
- Research Data Management Organiser - DMP
- GitLab
- Data citation
- ORCHID
- You can also attend courses offered by the two RMU partners of JGU, Goethe University Frankfurt and Technical University Darmstadt. You can find these courses on the [RMU website](#).

Informational events:

- RDM days at JGU
- FORSCHUNGSDATEN@RMU

RDM-INFRASTRUCTURES AT JGU

Research Data Management Organiser (RDMO) : [Data management planning \(DMP\) tool](#)

iRODS based Archive: [Research data archive](#)

GitLab: [Tool for code \(and text\) versioning](#)

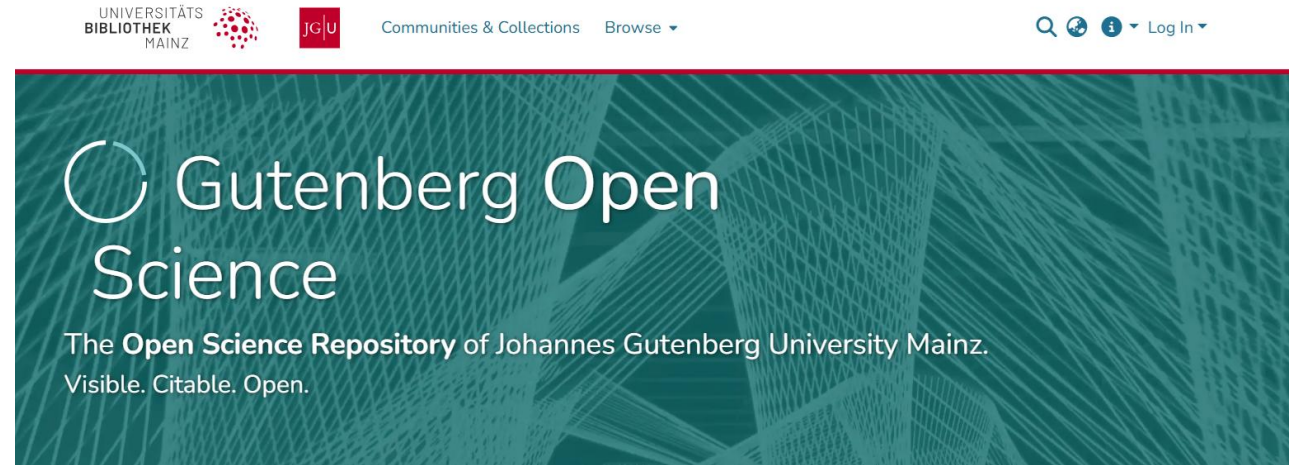
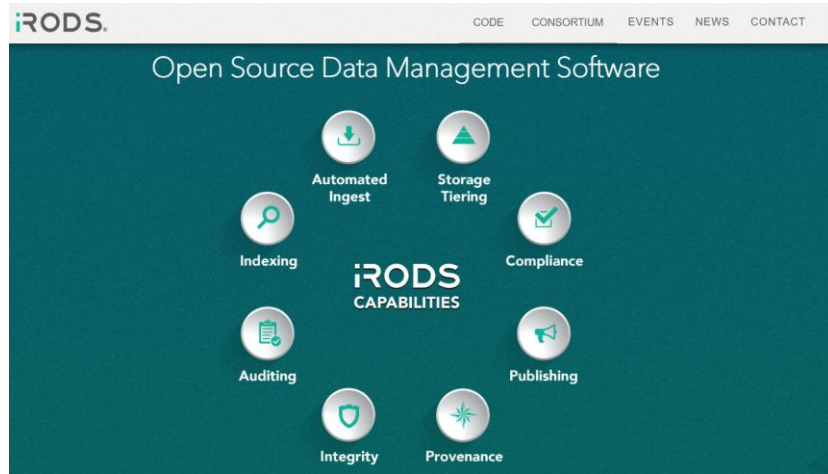
eLabFTW: [Electronic Lab Notebook](#)

Gutenberg Open Science: [Repository for open access publications and research data](#)

Gutenberg Capture: [Repository for Historical Sources](#)

Gutenberg Images: [Image Database](#)

IRODS ARCHIVE – GUTENBERG OPEN SCIENCE



What is used for what purpose?

THE FAIR DATA PRINCIPLES

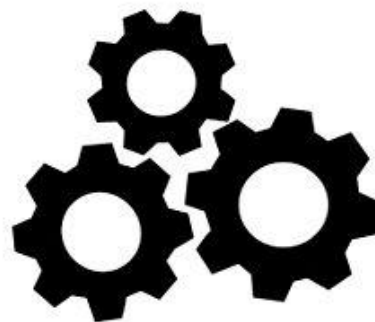
F_{indable}



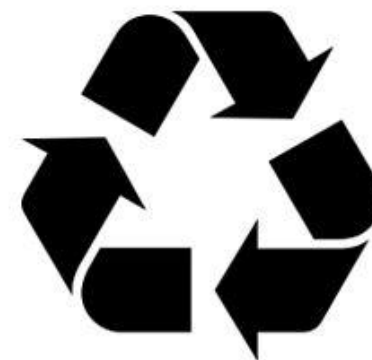
A_{ccessible}



I_{nteroperable}



R_{eusable}



Quelle: https://commons.wikimedia.org/wiki/File:FAIR_data_principles.jpg
Autor: [SangyaPundir](#) Titel: "FAIR Guiding principles for data resources" (17.11.2016)

CC Lizenz: Attribution-ShareAlike 4.0 International (CC BY-SA 4.0)

FAIR DATA

Short Keyword – High Impact!

HOW TO MAKE DATA FINDABLE?



- Describe research datasets with **metadata**
- Metadata is indexed in a searchable directory or repository
- Publication of research data, if applicable
- Provide research data (metadata) with persistent identifiers (DOI, URN etc.)

PANGAEA.

ECOLOGY

18121 datasets found on search in topic Ecology

< 1 2 3 4 5 6 7 8 9 10 >

1. **Chouvelon, T; Munsch, C; Bruzac, S et al. (2021):** Stable isotopes, energy density and elemental composition of deep pelagic crustaceans and fish sampled in October 2017 in the Bay of Biscay, North-East Atlantic
Related to: **Duhamel, E; Pawlowski, L; Garren, F (2017):** EVHOE 2017 cruise, Thalassa R/V. *Sismer*
Size: 2 datasets
<https://doi.pangaea.de/10.1594/PANGAEA.937345> - Score: 1.8
2. **Verdugo, J; Damm, E (2021):** Biogeochemical data during POLARSTERN cruise PS106/1 (ARK-XXXI/1.1)
Related to: **Macke, A; Flores, H (2018):** The Expeditions PS106/1 and 2 of the Research Vessel POLARSTERN to the Arctic Ocean in 2017. *Berichte zur Polar- und Meeresforschung = Reports on Polar and Marine Research*
Nikolopoulos, A; Linders, T; Rohardt, G (2018): Physical oceanography during POLARSTERN cruise PS106/1 (ARK-XXXI/1.1). *Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, Bremerhaven*
Rohardt, G (2018): CTD Data Processing Report - RV POLARSTERN Cruise PS106.
Size: 2 datasets
<https://doi.pangaea.de/10.1594/PANGAEA.937242> - Score: 1.8

HOW TO MAKE DATA ACCESSIBLE?



- Metadata and/or actual data are easily accessible
- Metadata available even if actual data is not accessible
- Defined licensing and access conditions

PANGAEA.

ECOLOGY

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< 1 2 3 4 5 6 7 8 9 10 >

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Coverage: Median Latitude: 47.196250 * Median Longitude: 8.468551 * South-bound Latitude

License:  Creative Commons Attribution 4.0 International (CC-BY-4.0)

Size: 73 datasets

HOW TO MAKE DATA INTEROPERABLE?



- Data are combinable with other data sets by humans or computers.
- Use of non-proprietary, open and described or commonly used formats

Recommended formats

Tables: CSV, TSV, SPSS portable

Text: TXT, HTML, RDF, PDF/A

Image: TIFF, JPEG2000, PNG

Multimedia: AVI, WAV, MP4

HOW TO MAKE DATA REUSEABLE?



- Data are in a form in which they can be used for further research and processing with computer-aided methods

Recommended formats

Tables: CSV, TSV, SPSS portable

Text: TXT, HTML, RDF, PDF/A


Image: TIFF, JPEG2000, PNG

Multimedia: AVI, WAV, MP4

Data Cite (Metadata) Basic Scheme

- Identifier
- Creators
- Title
- Publisher
- Publication year
- Subject
- Language
- Resource type
- Description

Coverage: Median Latitude: 47.196250 * Median Longitude: 8.468551 * South-bound Latit

License:  Creative Commons Attribution 4.0 International (CC-BY-4.0)

Size: 73 datasets

FAIR DATA PRINCIPLES



AH!

FINDABLE



ACCESIBLE



INTEROPERABLE



REUSABLE

Picture: [Open Science Training Handbook](#) | [Zenodo](#)
CC0

GOOD RESEARCH PRACTICE

REGULATIONS

for ensuring good research practice
and for dealing
with research misconduct

of Johannes Gutenberg University Mainz
dated February 13, 2023



gwp.uni-mainz.de (German)
grp.uni-mainz.de (English)

Persons involved in research at JGU are obliged

1. to work in accordance with the accepted rules of their scientific discipline (lege artis)
2. **to document and archive research findings in accordance with the rules of their discipline,**
3. **to be stringently honest when handling contributions from third parties,**
4. to assess the consequences resulting from their research and the ethical aspects thereof,
5. to consistently question their own research findings and those of others,
6. to allow and encourage critical discourse in the scientific community, and
7. to conduct themselves in an academically fair and collegial manner.

Section 5 Documentation (summarized)

Traceability of: research data and findings collected, methods, evaluations, analyses, interpretations, intellectual property of others, source codes

Documentation of individual results that do not corroborate the research hypothesis

Traceability also if documentation cannot be made (e.g. for technical reasons)

No manipulation of documentation and research results

RDM IN THE REGULATION FOR GOOD RESEARCH PRACTICE

Section 5 Documentation

“1. All information and steps in the research process relevant to the production of research findings must be documented in such a comprehensible manner as is necessary and appropriate in the concerned field to enable the verification and evaluation of these findings.


2. Documentation includes all relevant sub-steps of the research process. In particular, the following is considered required:

1. the research data and findings collected, how they were generated, and how they have been used,
2. the applied methods, evaluations, analyses, and interpretations,
3. the intellectual property of others that has been used, and
4. source codes (in the development of research software).

3. Individual results that do not corroborate the research hypothesis or interpretation must also be documented in order to be able to properly verify and evaluate overall findings. Ignoring such individual results opposes the goal of verification and evaluation and is therefore unacceptable.

4. If, in individual cases, documentation or parts thereof cannot be made or can only be made to a limited extent for technical, comprehensible reasons, this must be explained transparently and comprehensibly and be documented.

5. Documentation and research findings may not be manipulated and must therefore be protected against unauthorized access and manipulation to the greatest extent possible.”



Section 6 Handling Research Data (summarized)

Data collection and software development in accordance with subject-specific standards

Respect copyright and data protection

Note the rights of use of research data

Publication of research data is based on the FAIR Guiding Principles

Archiving for at least 10 years (e.g. JGU Data Center's research data archive)

No handpicking data, archive also the data that does not support the original research hypothesis

RDM IN THE REGULATION FOR GOOD RESEARCH PRACTICE

Section 6 Handling Research Data (abridged)

- „ (...) The type and scope of research data generated as well as the applied methods and evaluation and analysis steps **must be described in an understandable and comprehensive manner** (...) ” (Subsection 1)
- „The collection and use of research data must **comply with legal requirements**, in particular with regard to copyright and data protection.” (Subsection 3)
- „ (...) The **use of research data belongs primarily to the person who collects it**, subject to copyright regulations. A **transparent agreement on the right to use** the research data and findings from a project must be concluded as part of research collaborations and within work groups. (...) ” (Subsection 4)
- “In keeping with the principles of scientific transparency and traceability, research data underlying a publication **should be published if this is feasible and reasonable**. The publication of research data is based on the **FAIR Guiding Principles** for scientific data management and stewardship (Findability, Accessibility, Interoperability, Reusability). Research data must be published in a form that enables others to replicate the findings. (...) ” (Subsection 5)

RDM IN THE REGULATION FOR GOOD RESEARCH PRACTICE

- „Research data underlying a publication are made accessible and **stored in longterm readable formats for at least 10 years** at the author's own institution or in repositories or archives for research data across different sites. Exceptions exist for data that must be destroyed for legal or other science-based reasons. The JGU Data Center's research data archive is recommended for archiving research data at the university. The storage period begins on the date that public access to the research findings is established. The project managers of a research project are primarily responsible for this.” (subsection 6)

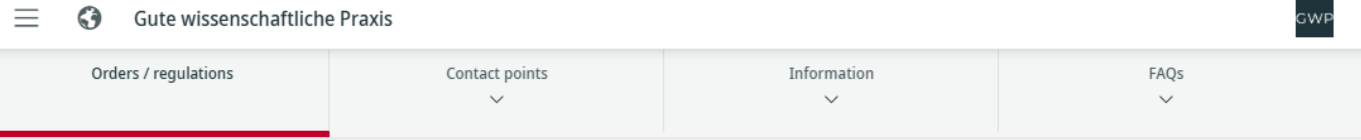
RDM IN THE REGULATION FOR GOOD RESEARCH PRACTICE

- „The storage requirements specified in Subsection 6 also apply to research data that does not support the original research hypothesis. **Handpicking data that could distort the findings is unacceptable.** In every instance where individual data points and results cannot be included for comprehensible reasons – in particular as part of a publication – this must be indicated in an appropriate form. Section 5 Subsection 4 applies accordingly.”
(Subsection 7)



More information on our website **grp.uni-mainz.de**

Always keep an eye
on scientific
integrity!



Reading version

Here you can access the reading version of the Regulations for ensuring good research practice and for dealing with research misconduct of JGU.



PDF Download

Here you can download the English version of the Regulations for ensuring good research practice and for dealing with research misconduct of JGU as a PDF file. Note that the legally binding version is the German one.



JGU policies and national regulations

Other relevant JGU regulations and policies

National regulations

International regulations and recommendations

- [Guidelines for handling research data](#)
- [Open Access Policy of the JGU](#)
- [Publication guidelines of the JGU](#)
- [JGU Mainz guidelines for the promotion of young researchers](#)
- [Guidelines for a supervision agreement at JGU](#)
- [Samples of supervision agreements at JGU](#)

THANKS FOR YOUR ATTENTION

Questions?

