



# Research Data Management (RDM)



in accordance with the FAIR and CARE principles  
March 24, 2021



**Johanssen Obanda**

 [@africarxiv](https://twitter.com/@africarxiv)  
 [0000-0002-2111-7780](https://orcid.org/0000-0002-2111-7780)  
[info@africarxiv.org](mailto:info@africarxiv.org)

**Jo Havemann**

 [@openscicomm](https://twitter.com/@openscicomm)  
 [0000-0002-6157-1494](https://orcid.org/0000-0002-6157-1494)  
[info@access2perspectives.org](mailto:info@access2perspectives.org)

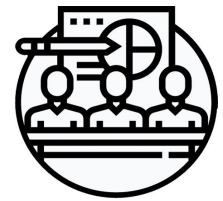
# The Research Data Lifecycle

1. Planning

2. Data collection,  
Management and  
Analysis

3. Preservation and Sharing

# Agenda



09:00-10:30 Introduction to RDM and the Research Data management Plan.

10:30-10:45 Break

10:45-11:45 The art of the spreadsheet: csv, interoperability, machine and human readability.

11:45-12:00 Break

12:00-13:00 Data inventory, folder organisation, file names, backups.

13:00-14:00 Lunch break

14:00-15:00 Open & FAIR data: repositories, licences, #BeFAIRandCARE and managing sensitive research data.

15:00-15:15 Break

15:15-16:15 Metadata: adding context and information to your data.

16:15-16:30 Break

16:30-17:30 How best to structure the Disc4All data, add metadata and find relevant repositories.

17:30-18:00 Wrap-up

# Community values in Open Science

**Diversity**

**Social behaviour**

**Inclusivity**

**Accountability**

**Fairness**

**Ethics**

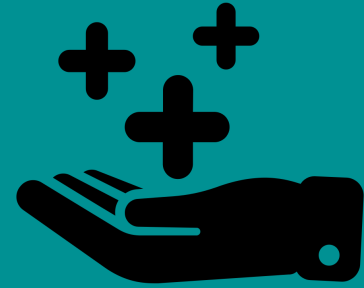
**Equity**

**Responsibility**

[github.com/OpenScienceMOOC/Module-1-Open-Principles/](https://github.com/OpenScienceMOOC/Module-1-Open-Principles/)

# Value-based goals of the Open Science community

- ✓ **Freely available access** to all outputs of the whole research process;
- ✓ **Equity and inclusive participation** in research;
- ✓ **Diverse and creative interpretations** of scientific results;
- ✓ **Rigorous, transparent, and responsible evaluation** of research processes and outcomes;
- ✓ **Collaborative re-use** of research outcomes, reducing costs, waste and redundancy;
- ✓ **Comprehensive research practices** incentivised through **more diverse reward systems**;
- ✓ **Accelerated** research discovery, innovation and **public impact**; and
- ✓ **Increasing reproducibility** of research results, enhancing **trustability and integrity**.



[github.com/OpenScienceMOOC/Module-1-Open-Principles/](https://github.com/OpenScienceMOOC/Module-1-Open-Principles/)

# Open Science – Open Culture



*The intersections of Open Science and Open Culture*

**OPEN SCIENCE:  
JUST  
SCIENCE  
DONE RIGHT**

Image license: CC-0



Access 2 RDM  
Perspectives

[access2perspectives.org](http://access2perspectives.org)

# *Do you believe that science can help progress towards reaching these goals?*



[sustainabledevelopment.un.org](https://sustainabledevelopment.un.org)



The Future of Research Communications and e-Scholarship

## Scholarly Commons Working Group

seeks to explore and redefine what a modern scholarly communication ecosystem should look like.

1. **Self Critique:** To assess where we stand regarding issues of diversity and inclusion.
2. **Principles:** To produce a set of updated **principles that define the commons** based on the two workshops and the **sets of charters** issued by groups around the world.
3. **Decision trees:** Sets of actions that can or should be taken to produce commons-compliant research objects.
4. **Enabling technologies and infrastructures:** Exploring supportive technologies and infrastructures that will enable the culture of the commons to flourish.

[force11.org/group/scholarly-commons-working-group](http://force11.org/group/scholarly-commons-working-group)



Access 2 RDM  
Perspectives

[access2perspectives.org](http://access2perspectives.org)

defines **Open Science** as:

*"The movement to make scientific research, data and dissemination accessible to all levels of an inquiring society."*

[fosteropenscience.eu](http://fosteropenscience.eu)

# Budapest **Open Access** Initiative (BOAI)

By "open access" to this literature, we mean **its free availability** on the public internet, permitting any users **to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software,** or use them for **any other lawful purpose**, without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself.

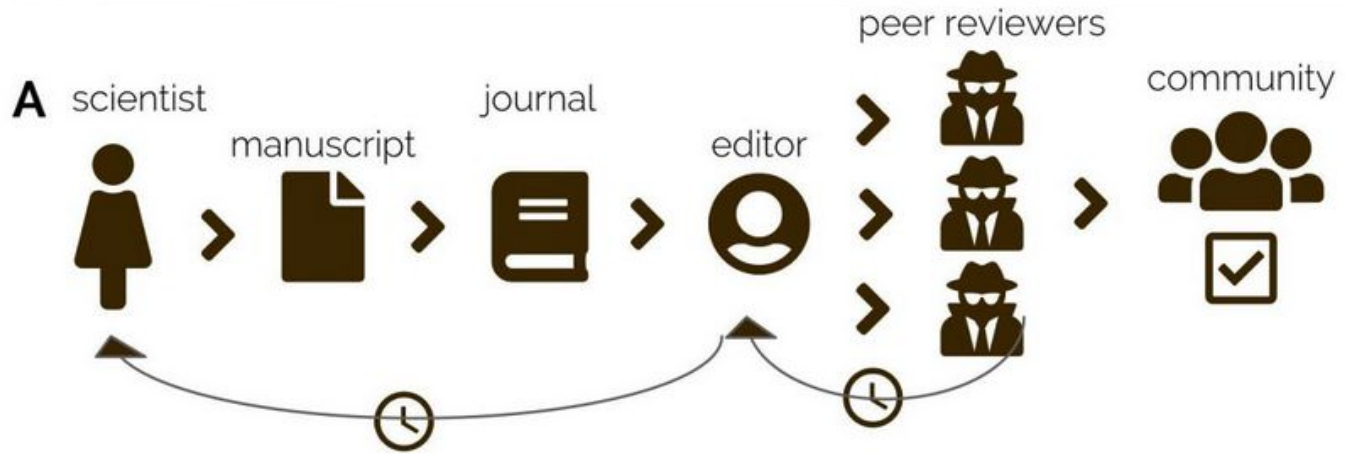
[legacy.earlham.edu/~peters/fos/boaifaq.htm](http://legacy.earlham.edu/~peters/fos/boaifaq.htm)

# Budapest **Open Access** Initiative (BOAI)

The **only constraint** on reproduction and distribution, and the only role for copyright in this domain, should be **to give authors control over the integrity of their work and the right to be properly acknowledged and cited.**

[legacy.earlham.edu/~peters/fos/boaifaq.htm](http://legacy.earlham.edu/~peters/fos/boaifaq.htm)

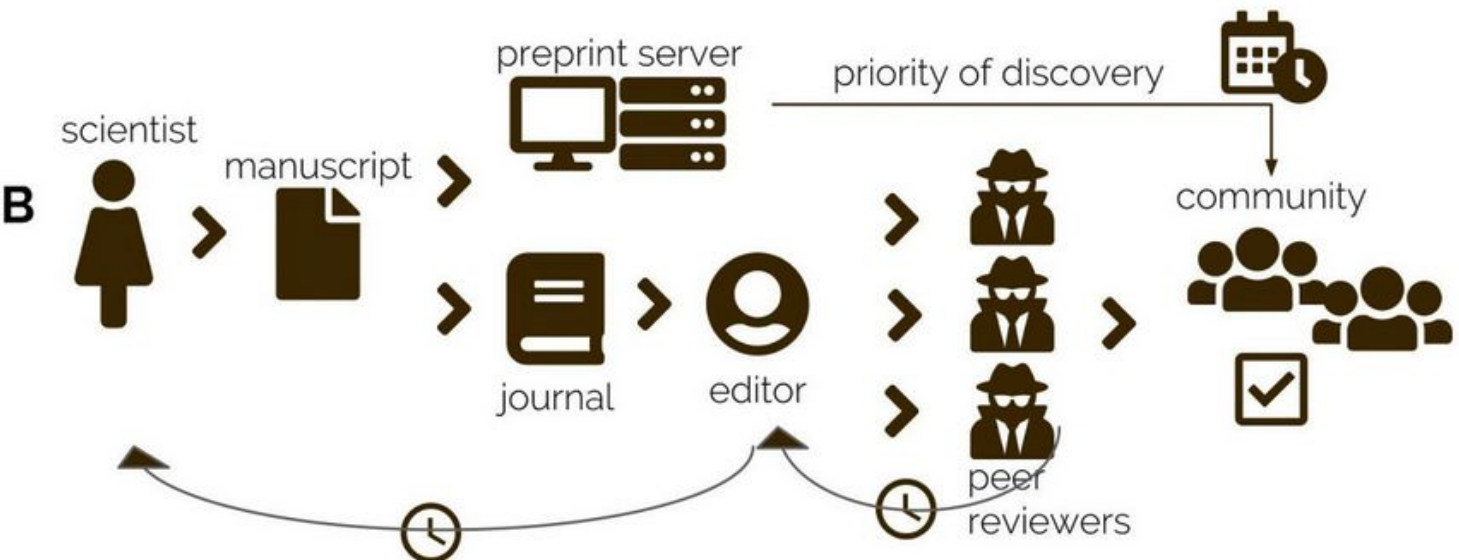
# Traditional peer review publishing workflow



From: Ten Hot Topics around Scholarly Publishing

[doi.org/10.3390/publications7020034](https://doi.org/10.3390/publications7020034)

# Preprint submission establishing priority of discovery



From: Ten Hot Topics around Scholarly Publishing

[doi.org/10.3390/publications7020034](https://doi.org/10.3390/publications7020034)



Talk with your **fund**ers, your **university**, your **library**; check available **tools** and **resources**



DOAJ  
DIRECTORY OF  
OPEN ACCESS  
JOURNALS

bioRxiv  
THE PREPRINT SERVER FOR BIOLOGY

arXiv.org



Publisher copyright policies & self-archiving

## How to make your research Open Access without breaking the bank

Do you know a **free OA journal** you want to submit to?



Go ahead and submit



Can you publish the post-print?



Publish the post-print of your article: after it has been peer reviewed, but before final editorial type-setting(\*)



Can you publish the pre-print?



Publish the pre-print of your article: before it has been submitted to a journal and peer-reviewed (\*)



Consider choosing a **different journal** to submit to, if possible

(\*) Check Sherpa/RoMEO for an overview of pre-print and post-print policies, as well as publishing licences and possible embargo periods imposed on post-print publishing.

From: Ten Hot Topics around Scholarly Publishing

[doi.org/10.3390/publications7020034](https://doi.org/10.3390/publications7020034)

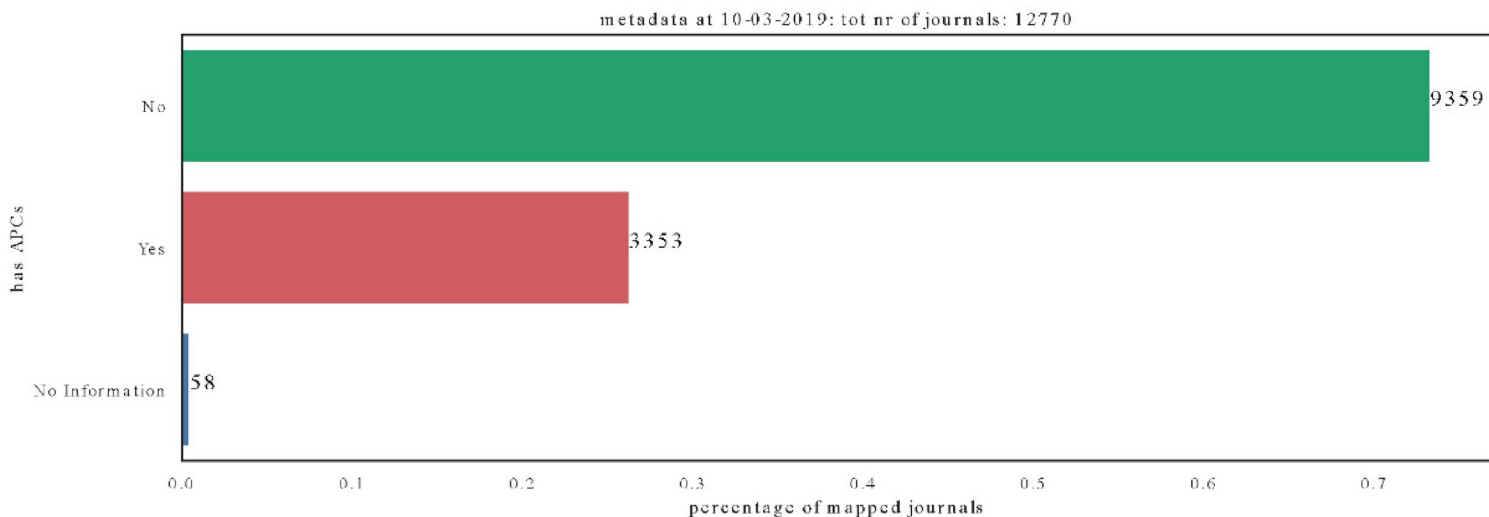


Access 2 RDM  
Perspectives

[access2perspectives.org](https://access2perspectives.org)

# Proportion of journals indexed in the DOAJ that charge or do not charge APCs (in 2019)

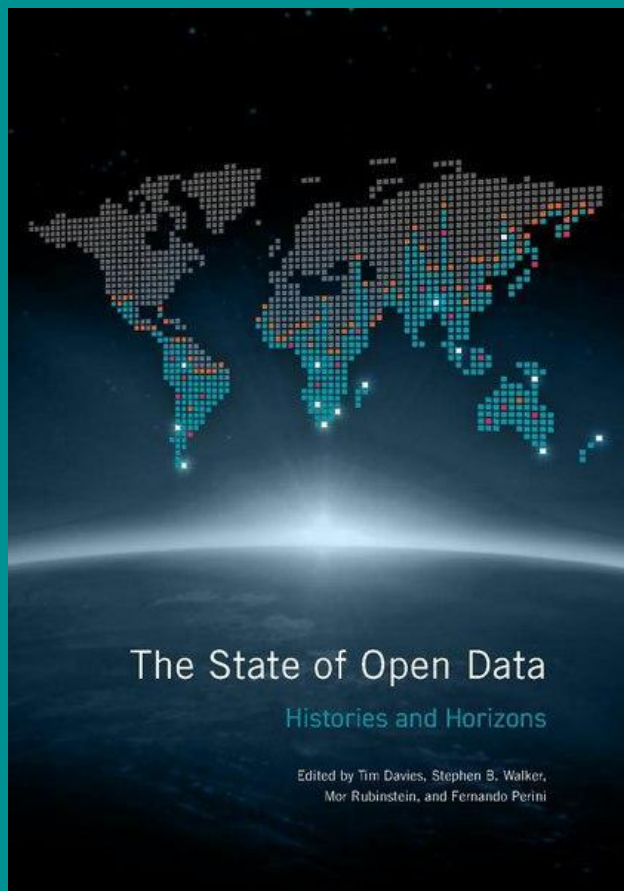
	has APCs	pctg journals	nr journals
0	No	73.29%	9359
1	Yes	26.26%	3353
2	No Information	0.45%	58



# Open Data

“A piece of data is open if anyone is free to use, reuse, and redistribute it – subject only, at most, to the requirement to attribute and/or share-alike.”

[opendefinition.org/od/2.1/en/](https://opendefinition.org/od/2.1/en/)



*The State of Open Data*, a 2019 book from [African Minds](#)

# FAIR Data

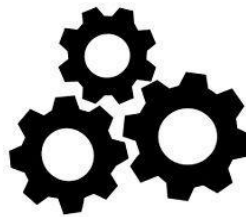
F<sub>indable</sub>



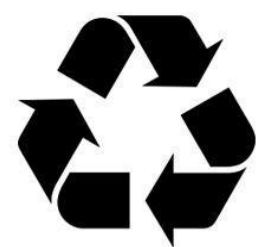
A<sub>ccessible</sub>



I<sub>nteroperable</sub>



R<sub>eusable</sub>



CC BY SA SangyaPundir

[en.wikipedia.org/wiki/FAIR\\_data](https://en.wikipedia.org/wiki/FAIR_data)



F1. (Meta)data are assigned a globally unique and persistent **identifier**

F2. Data are described with **rich metadata** (defined by R1 below)

F3. **Metadata** clearly and explicitly **include the identifier of the data they describe**

F4. (Meta)data are registered or indexed in a **searchable resource**

[en.wikipedia.org/wiki/FAIR\\_data](https://en.wikipedia.org/wiki/FAIR_data)



**A1. (Meta)data are retrievable** by their identifier  
using a standardised communications protocol

**A1.1 The protocol is open, free, and universally implementable**

**A1.2 The protocol allows for an authentication and  
authorisation procedure,**  
where necessary

**A2. Metadata are accessible,** even when the data are no longer  
available

[en.wikipedia.org/wiki/FAIR\\_data](https://en.wikipedia.org/wiki/FAIR_data)



11. (Meta)data use a **formal, accessible, shared, and broadly applicable language** for knowledge representation.
12. (Meta)data use **vocabularies that follow FAIR principles**
13. (Meta)data include **qualified references** to other (meta)data

[en.wikipedia.org/wiki/FAIR\\_data](https://en.wikipedia.org/wiki/FAIR_data)



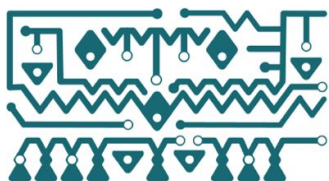
**R1. Meta(data) are richly described** with a plurality of accurate and relevant attributes

**R1.1. (Meta)data are released with a clear and accessible data usage license**

**R1.2. (Meta)data are associated with detailed provenance**

**R1.3. (Meta)data meet domain-relevant community standards**

[en.wikipedia.org/wiki/FAIR\\_data](https://en.wikipedia.org/wiki/FAIR_data)



# CARE Principles for Indigenous Data Governance

Be

# FAIR

Findable Accessible Interoperable Reusable

and

# CARE

Collective  
Benefit

Authority  
to Control

Responsibility

Ethics

[gida-global.org/care](https://gida-global.org/care)



Access 2 RDM  
Perspectives

[access2perspectives.org](https://access2perspectives.org)

# Who owns research data?

The public ?

No-one ?

Everyone ?

The researcher ?

The Funder ?

The Research Institution ?

The PI ?

# The African Open Access Portal



**AfricArXiv is a community-led digital archive for African research, working towards building an African-owned open scholarly repository; a knowledge commons of African scholarly works.**

**We partner with established scholarly repository services to provide a platform for African scientists of any discipline to present their research findings and connect with other researchers on the African continent and globally.**

[info.africarxiv.org/contact](http://info.africarxiv.org/contact)

# Repository Partners



[info.africarxiv.org/contact](http://info.africarxiv.org/contact)

## Since 2018



**450+ Submissions**



**2 Awards received**

ASAPbioSprint Award  
JROST Rapid Response Grant



**30+ Partners**



**5 Repositories**

**f**   **in** @africarxiv

[info.africarxiv.org](mailto:info.africarxiv.org) 

[info.africarxiv.org/contact](http://info.africarxiv.org/contact)

# Contact



 [info@afriCARxiv.org](mailto:info@afriCARxiv.org)

 [@afriCARxiv](https://twitter.com/afriCARxiv)

 [bit.ly/afriCARxiv-slack](https://bit.ly/afriCARxiv-slack)

 [facebook.com/afriCARxiv](https://facebook.com/afriCARxiv)

 [linkedin.com/company/afriCARxiv/](https://linkedin.com/company/afriCARxiv/)

 [github.com/afriCARxiv](https://github.com/afriCARxiv)

[info.afriCARxiv.org/contact](https://info.afriCARxiv.org/contact)