

## **Linked Open Science at RDA** RDA Plenary 20 Global research Commons - EOSC Future

Leyla Jael Castro Semantic Technologies Team, ZB MED

ljgarcia@zbmed.de















Linked Open Data  $\rightarrow$  RDF standards, common ground, openness, linking FAIR  $\rightarrow$  minimum metadata, enriched metadata, community agreement Open Science  $\rightarrow$  sharing as much as possible

**Linked Open Science**  $\rightarrow$  (lightweight) LOD + FAIR + Open Science

Metadata enabling bridges but also \*ilities Big community effort, cultural change

Image taken from https://www.w3.org/DesignIssues/LinkedData





As open as possible as close as necessary

**But...** we still need some minimum information on that that is closed (same on that that is open)

Metadata help us describe things: publications, data, software

Structured metadata plays a key role in **FAIR** and makes things easier for machines (Machine Learning) and humans



# **Research Metadata Schemas**





#### **Co-chairs**

- Leyla Garcia (ZB MED)
- Adam Shepherd (WHOI)
- Sarala Wimalaratne (DataCite)
- Mingfang Wu (ARDC)

## The group members

About 140 group members, many of them actively contributed to the group's outputs, the organization of the group's plenary sessions, and regular group calls

## Technical advisory group

- Simon Cox (CSIRO)
- Ruth Duerr (Ronin Institute)
- Doug Fils (Consortium for Ocean Leadership)
- Rafael C. Jimenez (Research Informatics at Alzheimer's Research/UK)
- Nick Juty (The University of Manchester)
- Siri-Jodha Khalsa (NSIDC)
- Andrea Perego (European Commission, IRC)



- To identify and bridge gaps in existing schemas commonly used for research data;
- To improve data discovery by looking at a common way to publish structured metadata via schema.org;
- To bring together communities who are working with Schema.org data vocabularies to describe research data and related resources;
- ► To provide **guidelines** for those communities whose needs are not addressed by existing metadata schema such as schema.org, and provide guidelines on proposing extensions.

## Supporting Output



#### A Collection of Crosswalks from Fifteen **Research Data Schemas to Schema.org**

#### The Challenge:

Enabling discovery of metadata crosswalks to Schema.org, for sharing resources and improving metadata interoperability.



https://www.rd-alliance.org/groups/research-metadataschemas-wq



## 

The Research Metadata Schemas WG collected, aligned and

#### What is the impact?

The collection of crosswalks provides an important insight into semantic interoperability of metadata schemas commonly used for research data. The collection can serve as a reference for data repositories when they develop their own crosswalks or for projects that develop common metadata frameworks.

Find out more about the Supporting Output from the **Research Metadata Schemas WG** 



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Citation: Wu, M., Hagan, P., Cecconi, B., Richard, S. M., Verhey, C., & RDA Research Metadata Schemas WG. (2021). A Collection of Crosswalks from Fifteen Research Data Schemas to Schema.org. Research Data Alliance.

https://doi.org/10.15497/RDA000 69

Chantelle Verhey, Karen Payne and Seiva Terada from the World Data System - International Technology Office developed the crosswalk visualization tool.

#### **Recommended Output**



#### (RDA)

#### Guidelines for Publishing Structured Metadata on the Web

#### The Challenge:

Publishing structured metadata on the web can provide a simple and efficient means to increase the FAIRness of research resources, however, the adoption of structured metadata requires a consistent implementation across data repositories in order to enable better interoperability of metadata, and therefore improve discoverability, accessibility and reusability of data.





#### What is the solution?

The Research Metadata Schemas Working Group has produced "Nine recommendations for publishing structured metadata on the web", based on community consultation and subsequent works. The nine recommendations cover the whole process of publishing structured metadata, tools that can help the process and the community engagement for sharing and contributing to common practices.

#### What is the impact?

Data repositories would benefit greatly from the recommendations that guide the process of implementing structured metadata. The consistent implementation across data repositories enhances both semantic and syntactic metadata interoperability on the web, which not only makes FAIRer metadata but also enables the creation of better data aggregation and data discovery applications to realise the full potential of open data.

> Find out more about the Recommendation from the Research Metadata Schemas WG

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Aarch 2022

**Citation:** Wu, M., Juty, N., RDA Research Metadata Schemas WG , Collins, J., Duerr, R., Ridsdale, C., Shepherd, A., Verhey, C., & Castro, L. J. (2021). Guidelines for publishing structured metadata on the Web V3.1. *Research Data Alliance*. DOI: <u>10.15497/RDA00066</u>

## **Recommended Output**





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# Linked Open Science for Machine Learning







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## FAIR for Machine Learning at RDA



- ► FAIR for Machine Learning  $\rightarrow$  new IG at RDA
- Synergies with other efforts: ELIXIR, NFDI4DataScience, the more the merrier
- Metadata for Machine Learning  $\rightarrow$  new task force (?)
  - Elements from the Data Optimization Model and Evaluation (DOME) recommendations to publish supervised machine learning
  - Extensions to other machine/deep learning approaches
  - Better coverage of software

Community challenges and community building









Linked Open Science for Software Management Plans

## maSMPs







### **Machine Actionable Software Management Plans**



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# Summary



### Open Science is getting attention Registries/Repositories ask for and will add some metadata Funders are asking for Data Management Plans and Open Science Strategies

## BUT

Metadata is still not well-adjusted to each digital object/research outcome Software and workflows still get less attention than data We need YOU joining the effort → providing good metadata and convincing others If you are interested in Linked Open Science,

you might be interested in

# Workshop on Metadata and Research (objects) Management for Linked Open Science

co-located with ESWC Hersonissos, Greece, 29 of May 2023



# #DaMaLOS2023

https://zbmed.github.io/damalos

## **Thanks!**



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