

Importance of Understanding and Documenting Legal Interoperability for FAIR Data

RDA & CODATA Legal Interoperability Of Research Data Interest Group

RDA 11th Plenary, Berlin

23 March 2018

Shelley Stall, AGU Director, Data Programs
sstall@agu.org @ShelleyStall



American Geophysical Union

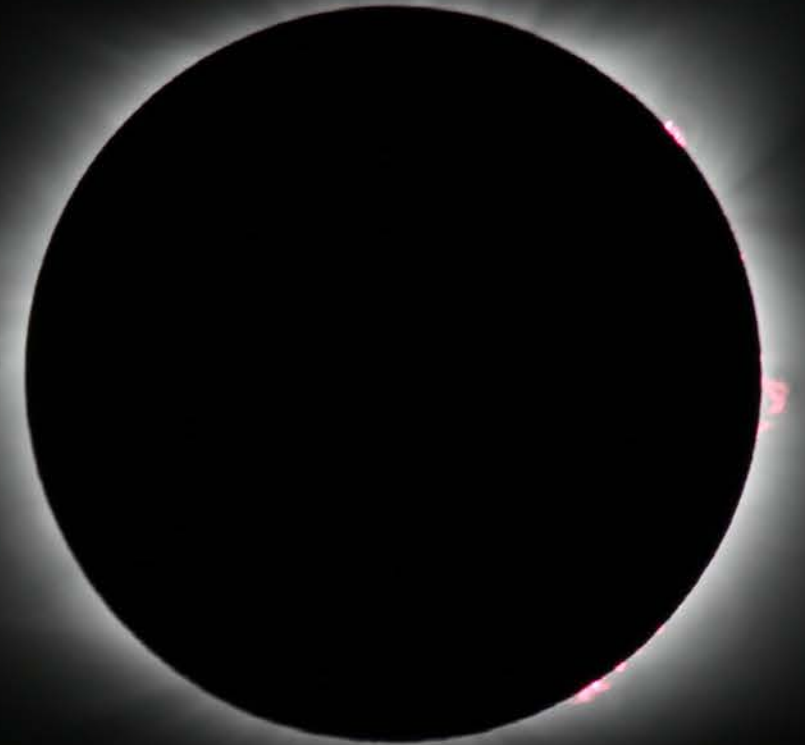
- > 60,000 members across 144 countries
- 20 peer-reviewed scholarly journals
- 100 year anniversary coming in 2019
- Scientific meetings
- EOS.org - online and print magazine

Galvanizes a community of earth and space scientists that collaboratively advances and communicates science and its power to ensure a sustainable future.



AGU's position statement on data affirms that

“Earth and space sciences data are a world heritage. Properly documented, credited, and preserved, they will help future scientists understand the Earth, planetary, and heliophysics systems.”



FAIR Guiding Principles

FAIR is...

Findable

Accessible

Interoperable

Reusable

Article in Nature journal *Scientific Data*: Wilkinson, M. D. *et al.* The FAIR Guiding Principles for scientific data management and stewardship. *Sci. Data* 3:160018 doi: 10.1038/sdata.2016.18 (2016).






New Grant from Laura and John Arnold Foundations (LJAF)

Align publishers and repositories in following best practices to enable FAIR and open data and to create workflows so that researchers will have a simplified, common experience when submitting their paper to any leading Earth and space science journal.

This will accelerate scientific discovery and enhance the integrity, transparency, and reproducibility of this data.

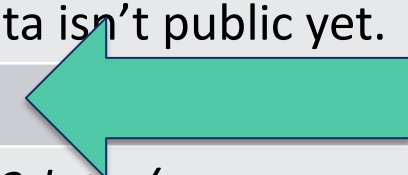


Enabling FAIR Data Project - Objectives

- **FAIR-compliant data repositories** will add value to research data, provide metadata and landing pages for discoverability, and support researchers with documentation guidance, citation support, and data curation.
- **FAIR-compliant Earth and space science publishers** will align their policies to establish a similar experience for researchers. Data will be available through citations that resolve to repository landing pages. Data are not placed in the supplement.

FAIR-Compliant Repositories

Services Provided:	Benefits:
Metadata support: Repository, Datasets, Citation	Supports Discovery, Understanding, Reuse <i>Repository: NSF 418 project, re3data.org</i> <i>Dataset: Repository determined, community-driven</i> <i>Data/Software Citation: Roadmap, ESIP, RDA, etc.</i>
Persistent identifiers	Supports Data Citation and Credit for Data and Reuse
Data Citation / Landing page compliance	Supports Best Practices and Common Experience for Researchers <i>[Roadmap for Data Citation for Scientific Repositories, elements 1-6]</i>
Publication Peer Review Support	Supports access for publication peer reviewers even if data isn't public yet.
Licensing policies (data & software)	Supports reuse of data and software.
Common list of approved FAIR-compliant repositories	Supports researchers locating compliant repositories. <i>[re3data / FairSharing]</i> Supports <u>publishers</u> individually determining endorsement.
Third-party validation of repository capability	Certification validating that many of the elements described above are implemented correctly in the repository. CoreTrustSeal.org DataOne Member Node



FAIR-Compliant Journals

Services Provided:	Benefits:
Common data and software citation policies and practices	Supports best practices and providing a common experience for all researchers. Data are no longer placed in the Supplemental Information [<i>Roadmap for Data Citation for Scholarly Publishers</i>] Improves research credit for data and reuse. [<i>Scholix</i>] <i>TOP Guidelines</i> , https://osf.io/9f6gx/ <i>FORCE 11 Joint Declaration of Data Citation Principles</i>
Common workflows for data citations	Supports best practices and providing a common experience for all researchers. <i>[THOR Project Outcomes – Data Linking with publication]</i>
Common expectations for publication peer review when evaluating science and determining if the data and metadata are adequate.	Supports publication peer review process. Identifies the role of reviewer vs. repository when it comes to evaluating the cited data (and software).

Data Sharing = Data Licensing

To encourage the sharing of data, we must also insist on a data license that states the data is as open as possible and preferably allows for reuse without restriction.

Similar requirement for **all digital research products**, especially software.

R1.1 of the FAIR Guiding Principles

(meta)data are released with a clear and accessible data usage license

Article in Nature journal *Scientific Data*: Wilkinson, M. D. *et al.* The FAIR Guiding Principles for scientific data management and stewardship. *Sci. Data* 3:160018 doi: 10.1038/sdata.2016.18 (2016).

Without a license...

- Your data and software are **not truly open**.
- Your data and software are **not reusable**.
- Your data and software **are not FAIR**.

Licenses benefit science...

- Licenses tells others that they can access, use, and share your data.
- Licenses allow science to advance by encouraging the community to collaborate and build on your work.

By sharing your data and software with a proper license that allows for reuse and adaption with minimal attribution, **you contribute to the advancement of science.**

The Reproducible Research Standard

The *Reproducible Research Standard (RRS)* (Stodden, 2009)

- A suite of license recommendations for computational science:
- Release media components (text, figures) under CC BY,
- Release code components under Modified BSD or similar,
- Release data to public domain or attach attribution license.
 - ➔ Remove copyright's barrier to reproducible research and,
 - ➔ Realign the IP framework with longstanding scientific norms.

Where should the license information be?

- On the landing page in a human readable way.
- Embedded in the metadata of the landing page in a machine readable way.
- Included with the dataset as part of the metadata.
- Does that cover it?

Thank you!

Shelley Stall

Director, AGU Data Program

sstall@agu.org

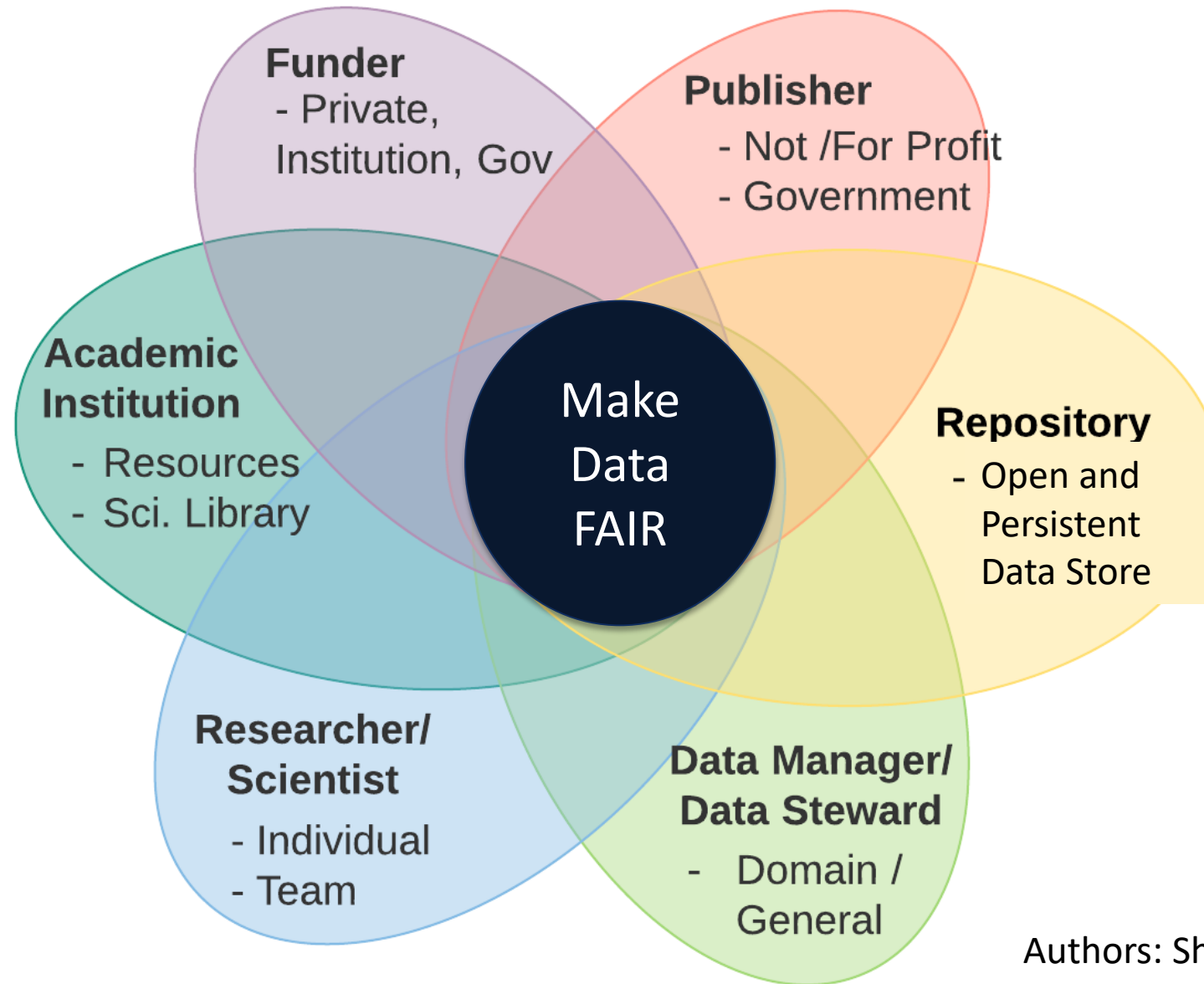
@ShelleyStall

AGU

100

**ADVANCING EARTH
AND SPACE SCIENCE**

Research Data Ecosystem



Other Roles:

- Research Labs
- Service providers to the ecosystem (e.g. PID providers like DataCite, github/Zenodo, CrossRef, FundRef, Scholix)
- Research offices -- not at institutions (e.g. Ronin)

Authors: Shelley Stall and Erin Robinson

How To Participate – Enabling FAIR Data

- **General Mailing List:** send request to sstall@agu.org
- **Review the Commitment Statement and consider being a signatory.**
<http://bit.ly/FAIRCommitment>
- **Learn more about how to include your organization!!** Send email to sstall@agu.org
- **Continue promoting the importance of Research Data Management!**

Enabling FAIR Data – Project Orientation Material

Article describing the Enabling FAIR Data Project:

<https://eos.org/editors-vox/enabling-findable-accessible-interoperable-and-reusable-data>

Outcome of the initial Stakeholder Meeting from Nov 16-17, 2017:

<https://eos.org/agu-news/enabling-fair-data-across-the-earth-and-space-sciences>

DataONE webinar recording:

<https://www.dataone.org/webinars/enabling-fair-data>

Enabling FAIR Data (high-level) Project Site:

<http://www.copdess.org/home/enabling-fair-data-project/>