

How can data journals support data sharing and discovery?

Guy Jones, Chief Editor, *Scientific Data*

07 December 2023

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What needs to change?

“The webinar series will focus on how data is enabling research – the current challenges and examples and how a better future can be created using chemistry data.

*It will showcase current and planned initiatives to **develop standards and tools, research infrastructures, and developing cultures to support Findable Accessible Interoperable Reusable (FAIR) chemistry data preparation, publication and reuse.**”*

What can we use in the meantime?

1

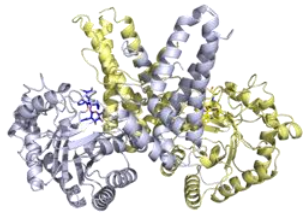
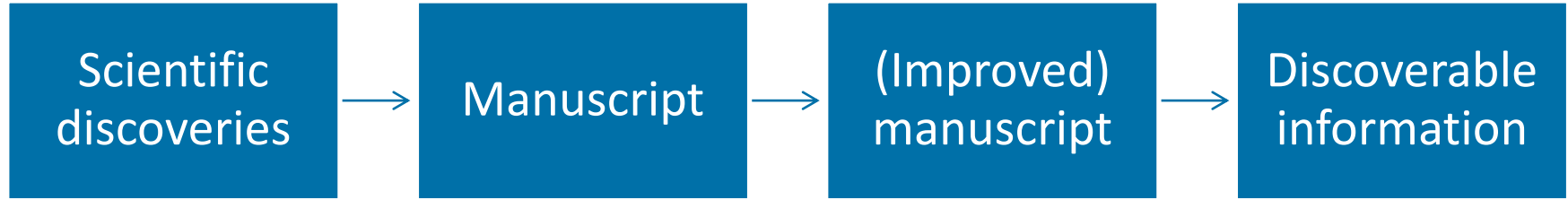


SPRINGER NATURE

Journal publishing

Modifying extant infrastructure to solve a new(ish) problem

Technical checks, peer review, typesetting, publication

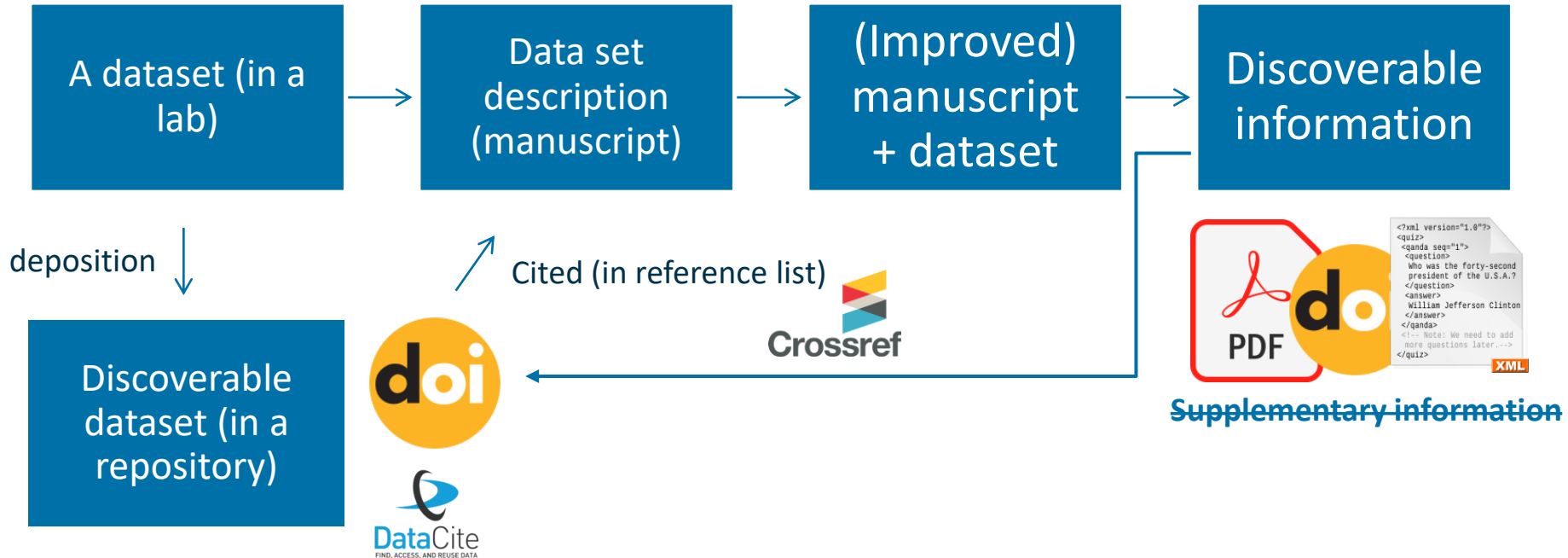


+ Supplementary information

Journal Data publishing

Modifying extant infrastructure to solve a new(ish) problem

Technical checks, peer review, typesetting, publication



Start with a dataset

Deposited within a repository

The State of Open Data 2022

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DataCite


Science, Digital; Goodey, Gregory; Hahnel, Mark; Zhou, Yuanchun; Jiang, Lulu; Chandramouliswaran, Ishwar; et al. (2022). The State of Open Data 2022. Digital Science. Report. <https://doi.org/10.6084/m9.figshare.21276984.v5> [Copy citation](#)

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 276

We're proud to release our seventh State of Open Data report.

← Data citation


Query (keywords)

→ Search results

→ SCIENTIFIC DATA 
Data Descriptor

→

References

1. Lei, L. *et al.* A dynamic anomaly detection n 125575 (2023).
2. Faustine, A., Pereira, L. & Klemenjak, C. A monitoring. *IEEE Trans. Smart Grid* **12**, 398
3. Afzalan, M. & Jazizadeh, F. Residential loads segments. *Appl. Energy* **254**, 113693 (2019).

What else does a Data Descriptor do?

Practical details on provenance, contents, and trustworthiness

Sections	Figures	References
Abstract		
Background & Summary		
Methods		
Data Records		
Technical Validation		
Usage Notes		
Code availability		
References		
Acknowledgements		
Author information		
Ethics declarations		
Additional information		
Supplementary information		
Rights and permissions		
About this article		



Support FAIR via (data) publishing policy

Data deposition in repository

- Supports the use of persistent identifiers - DOIs for datasets, registered with a suitable metadata registration agency (e.g. DataCite)
- Embargos during peer review, anonymous access for reviewers and no barriers to access upon publication (e.g. application processes, paywalls)
- “Download All” – search, visualisation, dashboards, et al provide useful functionality and save time for certain tasks, but repositories should offer the full datasets

Clear, Open Licences

- CC0 and CC-BY, or their equivalents

Data citation

- Built on DOIs and metadata deposition with CrossRef and DataCite

Community data standards, useable formats, and share raw and processed data

Legal and ethical protection - personal data, third party data, sensitive human data


Subject breadth

Physical, biological, social, environmental, medical, computational science & engineering

MIMIC-III, a freely accessible critical care database

[Alistair E.W. Johnson](#), [Tom J. Pollard](#) , [Lu Shen](#), [Li-wei H. Lehman](#), [Mengling Feng](#), [Mohammad Ghassemi](#), [Benjamin Moody](#), [Peter Szolovits](#), [Leo Anthony Celi](#) & [Roger G. Mark](#)

Scientific Data **3**, Article number: 160001
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 Database  Credentialed Access

MIMIC-III Clinical Database

[Alistair Johnson](#) , [Tom Pollard](#) , [Roger Mark](#) 

Published: Sept. 4, 2016. Version: 1.4

Surface energies of elemental crystals

[Richard Tran](#), [Zihan Xu](#), [Balachandran Radhakrishnan](#), [Donald Winston](#), [Wenhao Sun](#), [Kristin A. Persson](#) & [Shyue Ping Ong](#) 

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[An Su](#) & [Krishna Rajan](#) 

Scientific Data **8**, Article number: 14 (2021) | [Cite this article](#)

 A Database Framework for Rapid Screening of Structure-Function Relationships in PFAS Chemistry

Peer review

Experimental Rigor and Technical Data Quality

Was the data produced in a rigorous and methodologically sound manner?

Please Select ▼

Was the technical quality of the data supported convincingly with technical validation experiments and statistical analyses of data quality or error, as needed?

Please Select ▼

Are the depth, coverage, size, and/or completeness of these data sufficient for the types of applications or research questions outlined by the authors?

Please Select ▼

Completeness of the Description

Are the methods and any data processing steps described in sufficient detail to allow others to reproduce these steps?

Please Select ▼

Did the authors provide all of the information needed for others to reuse this dataset, or integrate it with other data?

Please Select ▼

Is this Data Descriptor, in combination with any repository metadata, consistent with relevant minimum information or reporting standards?

Please Select ▼

Integrity of the Data Files and Repository Record

To the degree that you have viewed the actual data files, did they appear complete and do they match the descriptions in the Data Descriptor?

Please Select ▼

Have these data files been deposited in the most appropriate available data repository?

Please Select ▼

. . . In the absence of Results

- Readers can download and use the data without bias
- It provides an alternative channel for research publication
- Counterbalances the extra steps
- Sound science publishing model – we don't make editorial assessments on perceived impact

SCIENTIFIC DATA 

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