

Bringing researchers along on the road to FAIR data





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Slides are available



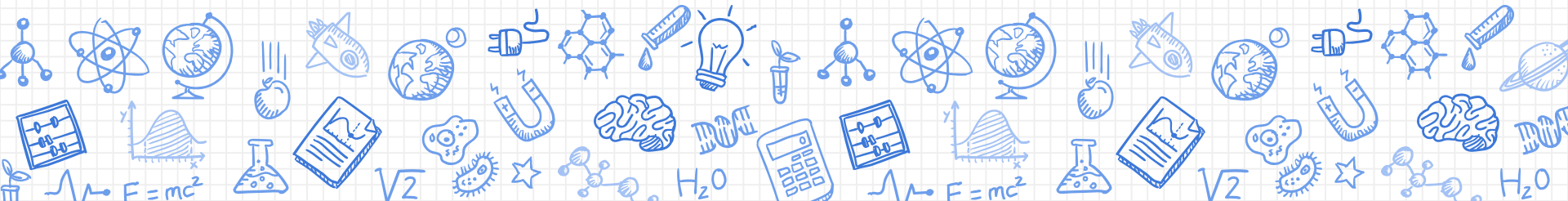
<https://doi.org/10.5281/zenodo.3249802>



@gravana

FAIR data

Readily embraced and rapidly adopted



The FAIR Principles were formulated in Leiden in 2014



Lorentz workshop – draft formulation of a set of foundational principles that were subsequently elaborated in greater detail in consultation with [FORCE11](#).



Paper published in March 2016

www.nature.com/scientificdata

SCIENTIFIC DATA

Amended: Addendum

OPEN Comment: The FAIR Guiding Principles for scientific data management and stewardship

SUBJECT CATEGORIES

- » Research data
- » Publication characteristics

Mark D. Wilkinson *et al.*[#]

There is an urgent need to improve the infrastructure supporting the reuse of scholarly data. A diverse set of stakeholders—representing academia, industry, funding agencies, and scholarly publishers—have come together to design and jointly endorse a concise and measurable set of principles that we refer to as the FAIR Data Principles. The intent is that these may act as a guideline for those wishing to enhance the reusability of their data holdings. Distinct from peer initiatives that focus on the human scholar, the FAIR Principles put specific emphasis on enhancing the ability of machines to automatically find and use the data, in addition to supporting its reuse by individuals. This Comment is the first formal publication of the FAIR Principles, and includes the rationale behind them, and some exemplar implementations in the community.

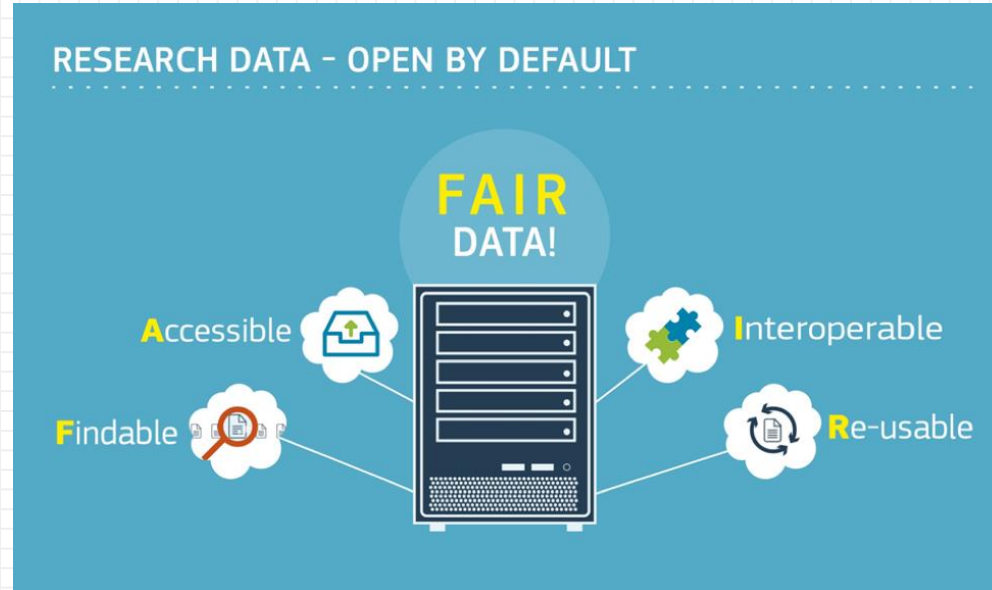
Received: 10 December 2015

Accepted: 12 February 2016

Published: 15 March 2016



July 2016: FAIR Data Management in Horizon 2020



FAIR data rapidly endorsed by the European Commission: [H2020 Programme Guidelines on FAIR Data Management in Horizon 2020](#)



Academic libraries in Europe and worldwide embraced FAIR



Implementing FAIR Data Principles: The Role of Libraries

“Research libraries can use FAIR Data Principles as a framework for fostering and extending research data services.”

<https://libereurope.eu/wp-content/uploads/2017/12/LIBER-FAIR-Data.pdf>



FAIR quickly gained momentum in the research data field



Sarah Jones
@sjDCC

I was struck by how often FAIR was mentioned at [#RDaplenary](#) so added up. It's mentioned in no less than 23 of the session descriptions, covering topics as diverse as aircraft systems data, agriculture, costs and ethics. Amazing a policy initiative has such broad uptake so quickly

9:34 AM · Mar 29, 2018 · [TweetDeck](#)

6 Retweets 8 Likes





“Little in the research data field has gained such traction and universal acceptance as the FAIR data principles...

While interpretations of what it means to be FAIR (...) vary, nobody disagrees with what the principles assert.”

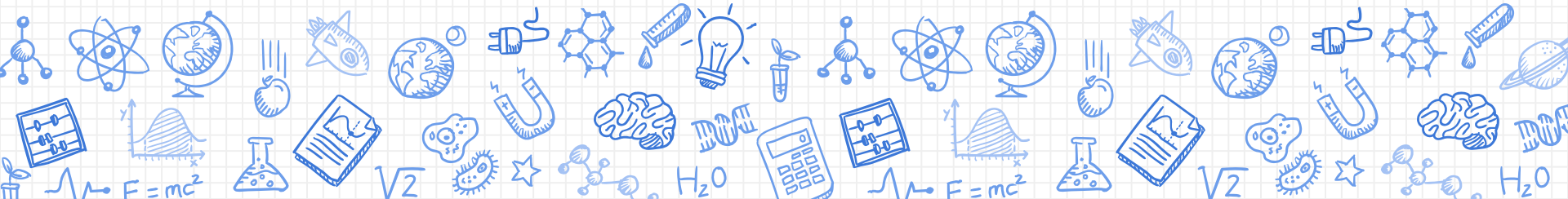
Higman, R., Bangert, D., & Jones, S. (2019). Three camps, one destination: the intersections of research data management, FAIR and Open. DOI: <http://doi.org/10.1629/uksg.468>



Everybody loves FAIR!

FAIR what?

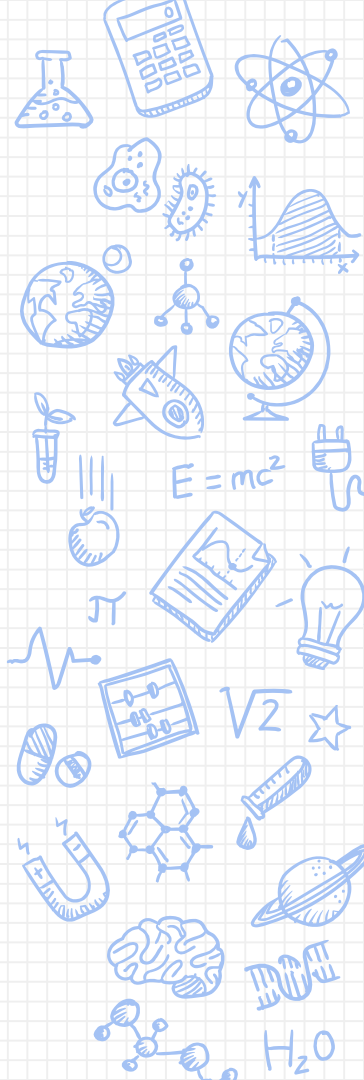
Researchers don't know about it!



FAIR principles have yet to gain traction among researchers



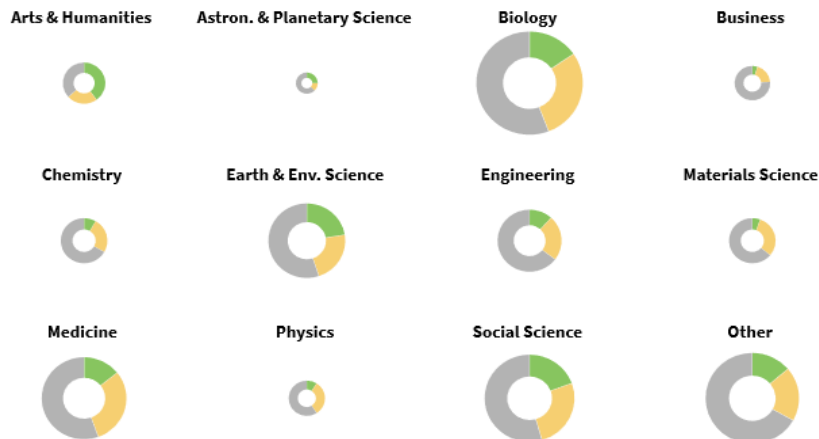
The 2018 State of Open Data report, published by Digital Science, found that **just 15% of researchers** were “familiar with FAIR principles”.



Familiarity with FAIR principles

The majority of researchers surveyed as part of a recent study on open data had never heard of FAIR, regardless of their field. Of the 748 researchers that responded to this question, 144 said they were familiar with the principles. Circles are sized by number of respondents.

- I am familiar with the FAIR principles
- I have previously heard of the FAIR principles but I'm not familiar with them
- I've never heard of the FAIR principles before now

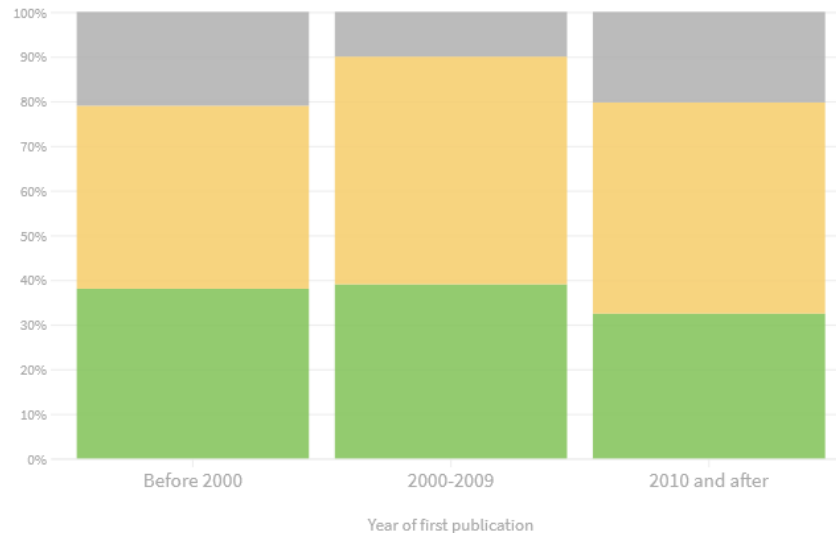


Source: [State of Open Data](#)

Compliance with FAIR principles

Of the participants who were familiar with FAIR, about a third said that their data management practices were very compliant with the principles. That proportion is similar across scientists at different stages of their career.

- Very much
- Somewhat
- Neutral / Not very much



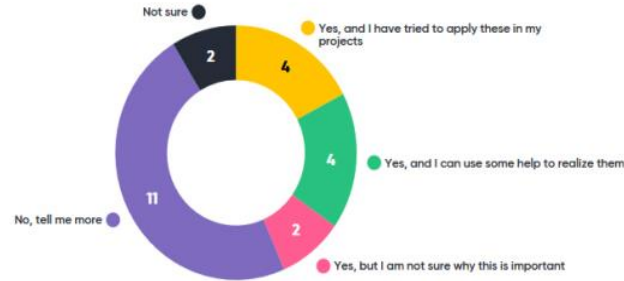
Source: [State of Open Data](#) • Data shown for respondents familiar with FAIR principles

<https://www.natureindex.com/news-blog/what-scientists-need-to-know-about-fair-data>



At a recent life sciences conference in the Netherlands

Have you heard of FAIR data principles?



The majority of the participants of a recent FAIR Data Management workshop in the Netherlands learned about FAIR for the first time.

<https://openworking.wordpress.com/2019/06/03/review-on-workshops-to-make-your-data-more-fair-some-practical-tools-and-suggestions/>

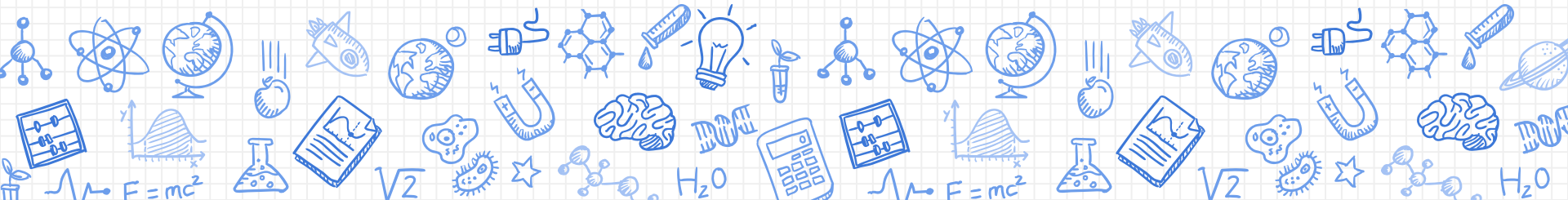


“This lack of awareness is concerning as the FAIR principles are being rapidly adopted by publishers, funders and institutions worldwide but there is a crucial gap in educating researchers...”

Science D, Hahnel M, Fane B, Treadway J, Baynes G, Wilkinson R, et al.. The State of Open Data Report 2018. figshare; 2018. <https://doi.org/10.6084/m9.figshare.7195058.v2>

Engaging researchers with FAIR data

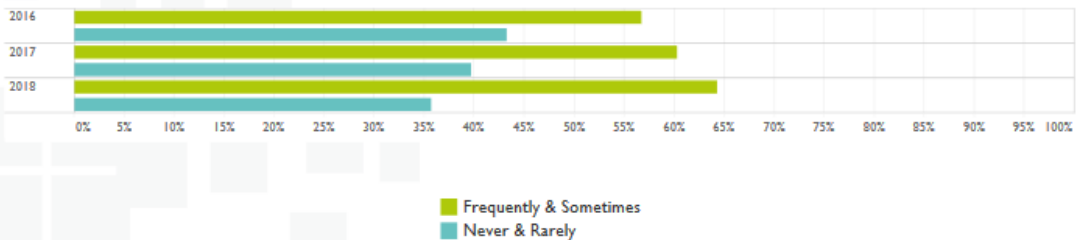
How to bridge that gap?



Many researchers do not make their data available

Data sharing is just not common practice in some fields

Fig 1. How often researchers have made their data openly available



Science D, Hahnel M, Fane B, Treadway J, Baynes G, Wilkinson R, et al.. The State of Open Data Report 2018. figshare; 2018. <https://doi.org/10.6084/m9.figshare.7195058.v2>

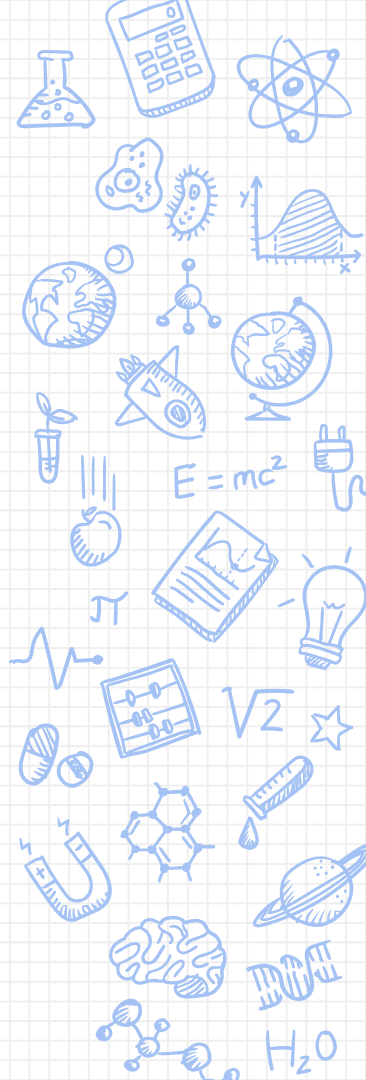
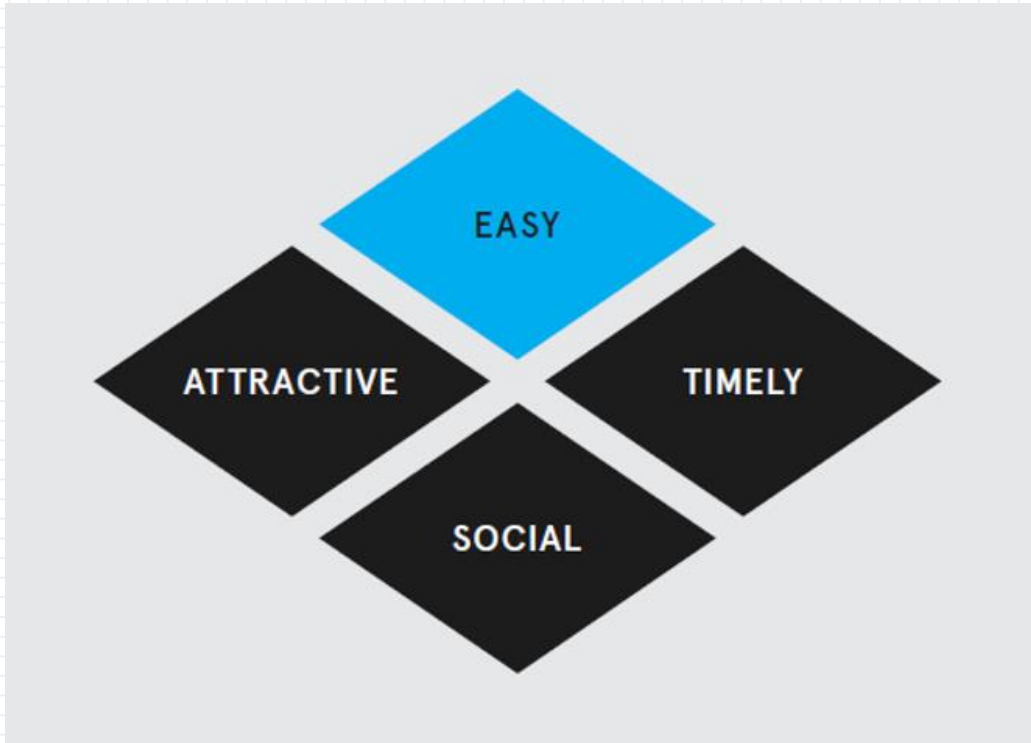
How to encourage behavioural change?



Let's look at some lessons from the Behavioural Insights Team "[EAST: Four Simple Ways to Apply Behavioural Insights](#)"



If you want to encourage a behavior, go EAST



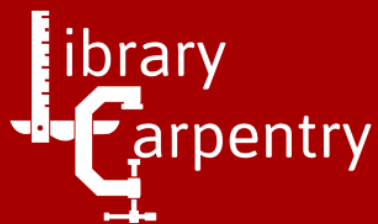


EASY – specific, simple steps towards FAIR data

Upload data to a trusted repository

- F** – Persistent identifier for the data and metadata
- A** – Data access and preservation policy; access via open and standard communication protocol
- I** – Standard metadata descriptions attached to the data; references to other data/metadata
- R** – License

EASY & ATTRACTIVE – disciplinary guidance in simple ‘chunks’



Announcing the Top 10 FAIR Data Things Global Sprint

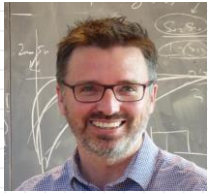
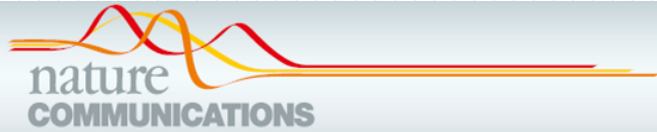
A global sprint to develop 10 FAIR things resources for data in different disciplines

[TOP 10 FAIR Data & Software Things](#) – step by step guides by research disciplines and/or themes to be used by the research community to understand and apply FAIR in different contexts.





SOCIAL – Identify your Data Champions



ARTICLE

DOI: [10.1038/s41467-018-06595-2](https://doi.org/10.1038/s41467-018-06595-2)

OPEN

A ballistic graphene superconducting microwave circuit

Felix E. Schmidt¹, Mark D. Jenkins¹, Kenji Watanabe², Takashi Taniguchi² & Gary A. Steele¹

[TU Delft Data
Champion](#)

Data availability

All raw and processed data as well as supporting code for processing and figure generation is available in Zenodo with the identifiers

<https://doi.org/10.5281/zenodo.1296129>⁴³ and

<https://doi.org/10.5281/zenodo.1408933>⁴⁴.

SOCIAL – encourage peer-to-peer spread of knowledge

DATA CONVERSATIONS

17 June 2019, 12:00-13:30, HG-1A-36
Open Data, Open Methods, Reproducible Research

Agenda

Wido van Peursen "Github as a meeting place for Biblical scholars. Open Science and community building"

Tomas Knapen "Open science methods: Lessons from neuroimaging"

Kristina Hettne "FAIR principles applied: a case study in reproducible data science research"

Esther Plomp "Following laboratory protocols: Filling in the gaps using protocols.io"



SOCIAL – encourage peer-to-peer spread of knowledge



Joshua Sendall
@JSendall

1st edition of @VUamsterdam Data Conversations is off to a great start! First up is @PeursenWTVan talking about #OpenScience and Biblical Research #vudatacon @UBVU @gravana #OpenResearch



12:24 PM · Jun 17, 2019 · Twitter Web Client

8 Retweets 18 Likes



Leah Bührmann
@LeahBuehrmann

Contribute to #openscience by making your data, methods, and results freely accessible for everyone #vudatacon the field of neuroscience as a great example for facilitating research through sharing resources: openneuro.org #teamup to #improve #health @VU_Science



1:35 PM · Jun 17, 2019 · Twitter for iPhone

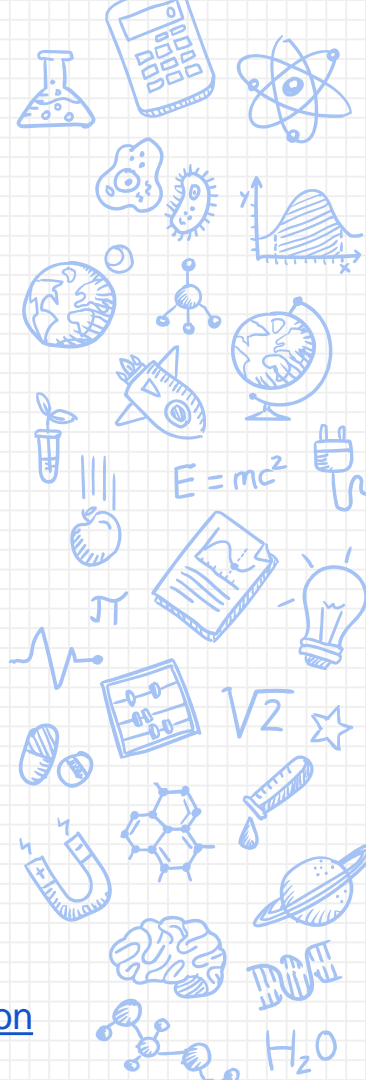
3 Retweets 9 Likes



[#vudatacon](https://twitter.com/vudatacon)



SOCIAL – encourage peer-to-peer spread of knowledge



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12:24 PM · Jun 17, 2019 · Twitter Web Client

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Kristina Hettne
@KristinaHettne

Enjoyed the diverse audience today at the @UBVU, great questions about #FAIRdata practices around sensitive data. Thank you so much @gravana for inviting me from @CDSLeiden @ubleiden



Joshua Sendall @JSendall · Jun 17

@KristinaHettne from @UniLeiden discussing implementation of FAIR principles in practice for genomics – acknowledging that it takes some planning but it can pay dividends #vudatacon @UBVU @gravana #OpenResearch #OpenScience



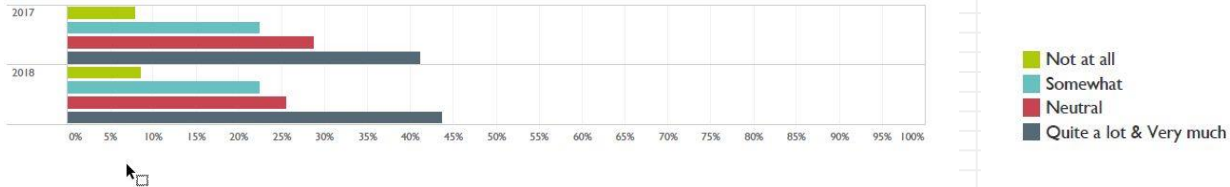
3:12 PM · Jun 17, 2019 · Twitter Web Client

3 Likes



TIMELY – what's in it for me now?

Fig. 2 Getting citations as motivation for making data openly available



“Increased impact and visibility of research and public benefit remain the most potent motivators behind a researchers decision to share.”

Science D, Hahnel M, Fane B, Treadway J, Baynes G, Wilkinson R, et al.. The State of Open Data Report 2018. figshare; 2018. <https://doi.org/10.6084/m9.figshare.7195058.v2>



TIMELY & SOCIAL – profile researchers, showcase their stories



[Home](#) / [News and Agenda](#) / [News archive](#) / 'Sharing data leads to more citations, and I see it as a moral obligation'



'SHARING DATA LEADS TO MORE CITATIONS, AND I SEE IT AS A MORAL OBLIGATION'

Professor Peter Verburg explains why he shares his data in open access via DataverseNL.

© 05/23/2019 | 1:39 PM

'Within my Environmental Geography research group, we have recently begun archiving and publishing our data on [DataverseNL](#)', Professor [Peter Verburg](#) says enthusiastically. 'VU researchers can use [DataverseNL](#) free of charge for datasets up to 50 GB in size, and the platform is user-friendly. It also allows us to share our data in open access, which I believe is very important.'

Data on land use

'As environmental researchers, we are interested in spatial data on land use. This includes information relating to urbanisation, deforestation and food production, for instance. We collect data by interpreting satellite images and conducting interviews, among other things. We then use this data to create models (scenarios) that show what the land use in these areas might look like in the future.'

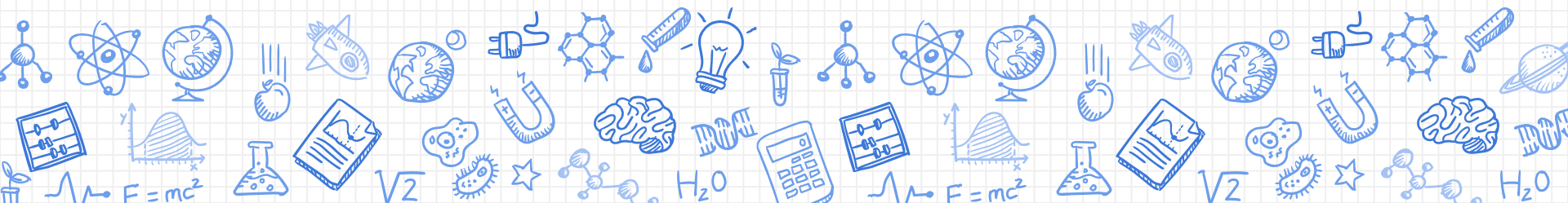


<https://ub.vu.nl/en/news-agenda/news-archive/2019/apr-jun/sharing-data-leads-to-more-citations-and-i-see-it-as-a-moral-obligation.aspx>



Researcher Engagement

RDA project under the Libraries for Research Interest Group





Researcher Engagement Project

International and multi-institutional project

30+ project members

All volunteers, from 3 continents

216 collected case studies

From research institutions internationally, on how to engage with the research community about research data



Researcher Engagement Project

We will be soon sprint writing a book that will showcase the most innovative approaches to researcher engagement with research data management and FAIR data.

Stay tuned!

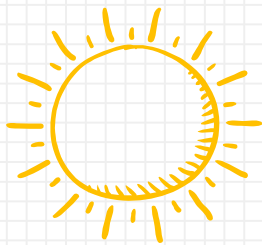


Researcher Engagement Project

For more information:

[Researcher Engagement With Data Management – What Works?](#)

[RDA Engaging Researchers With Research Data: Peeping Through The Team's Activities](#)



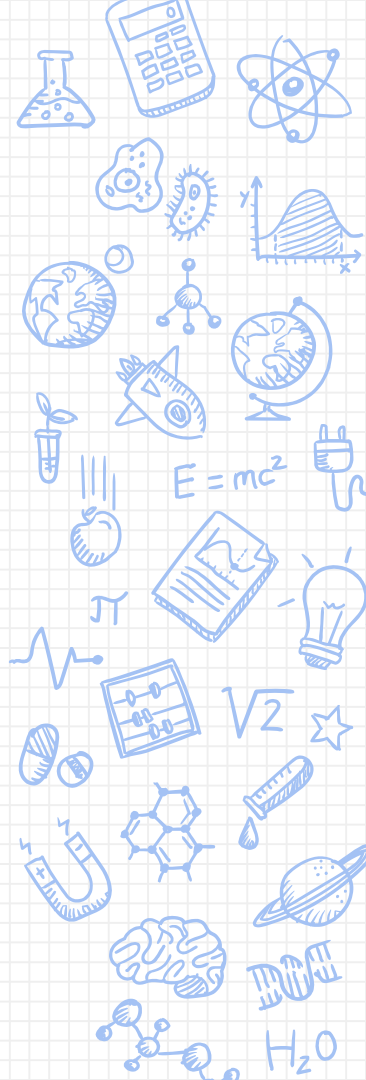
THANK YOU!

Questions?

You can find me at @gravana

Presentation available

<https://doi.org/10.5281/zenodo.3249802>



Credits

With thanks to my colleague Anneke de Maat for introducing me to [EAST: Four simple ways to apply behavioural insights](#)

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