

Making research data the new water

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Analogy: data is the new oil

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TECH BRAINSTORM TECH

Why Data Is The New Oil

by Jonathan Vanian

@JonathanVanian

JULY 11, 2016, 8:35 PM EST

<http://fortune.com/2016/07/11/data-oil-brainstorm-tech/>

PARTNER CONTENT JORIS TOONDERS, YONEGO
**DATA IS THE NEW OIL OF THE
DIGITAL ECONOMY**



Oil: finite quantity

And there are some negative associations:

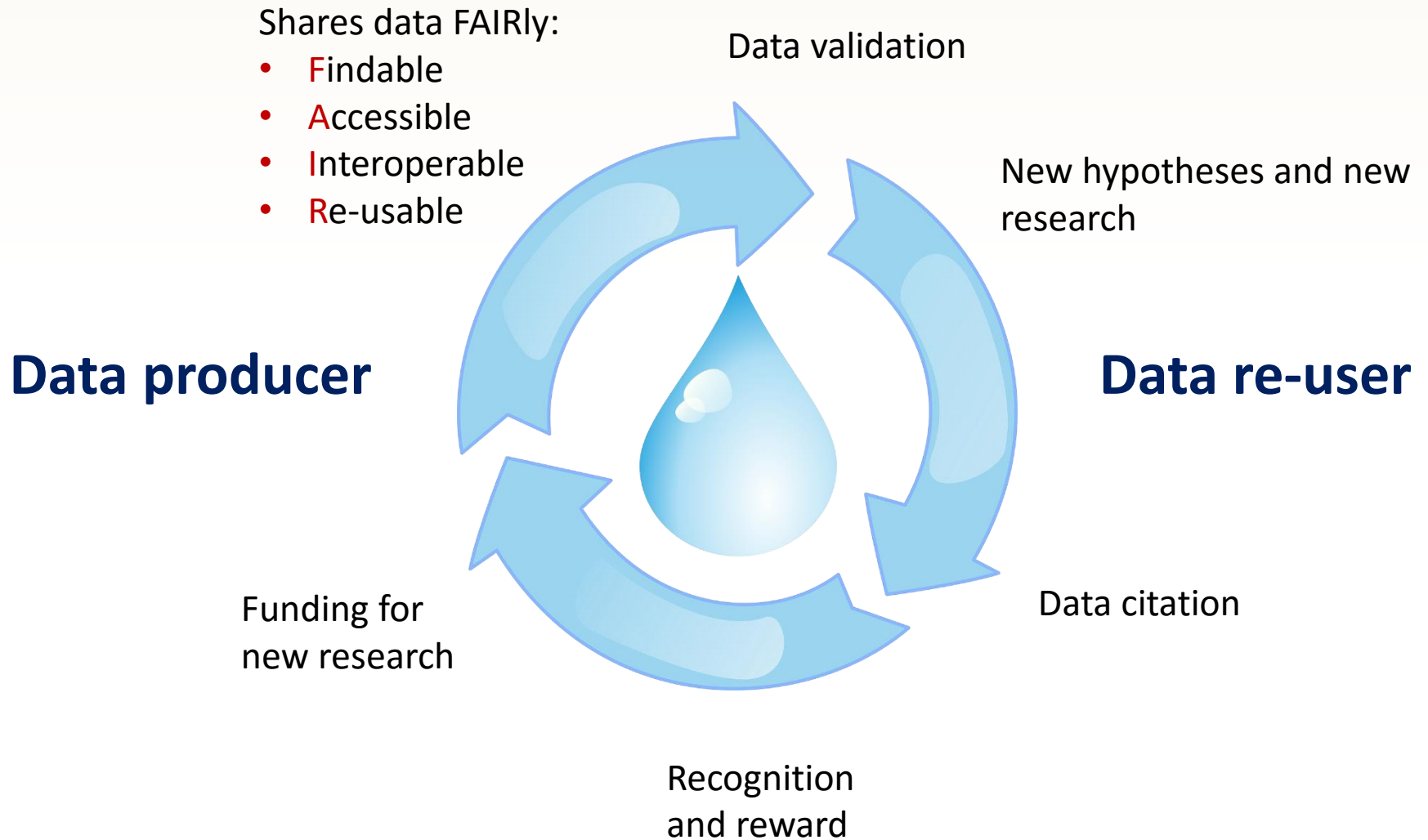
- Oil is about the money
- Oil is about exploitation and not about social justice

So perhaps data should be the new water?

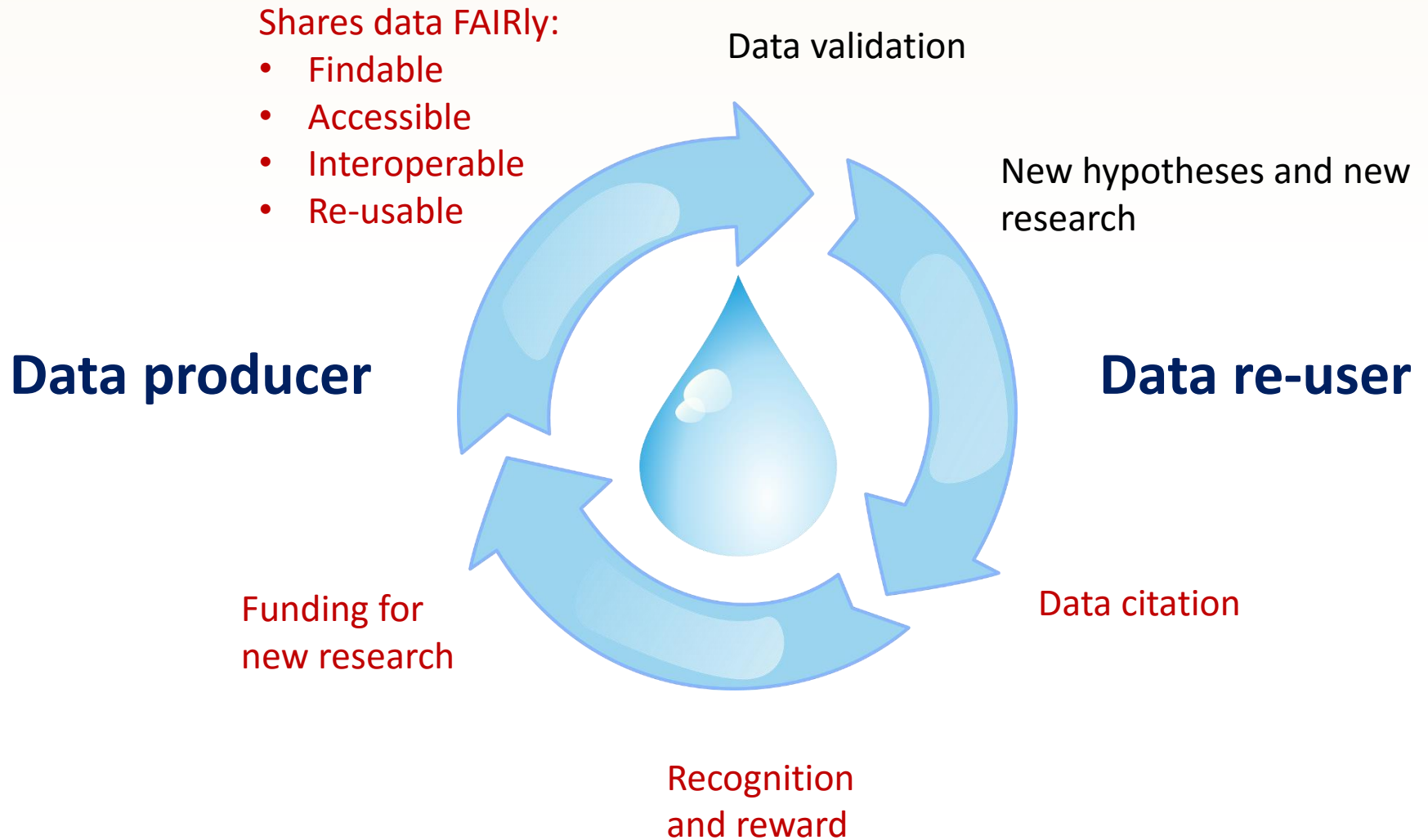


Image from Pixabay, CC0 licence

Assumptions behind data being like water OSC



Assumptions behind data being like water OSC



How to make data recyclable?

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Data producers and data re-users need to feel rewarded for doing the right thing

Image from Pixabay, CC0 licence

Time to stop believing in fairy tales?

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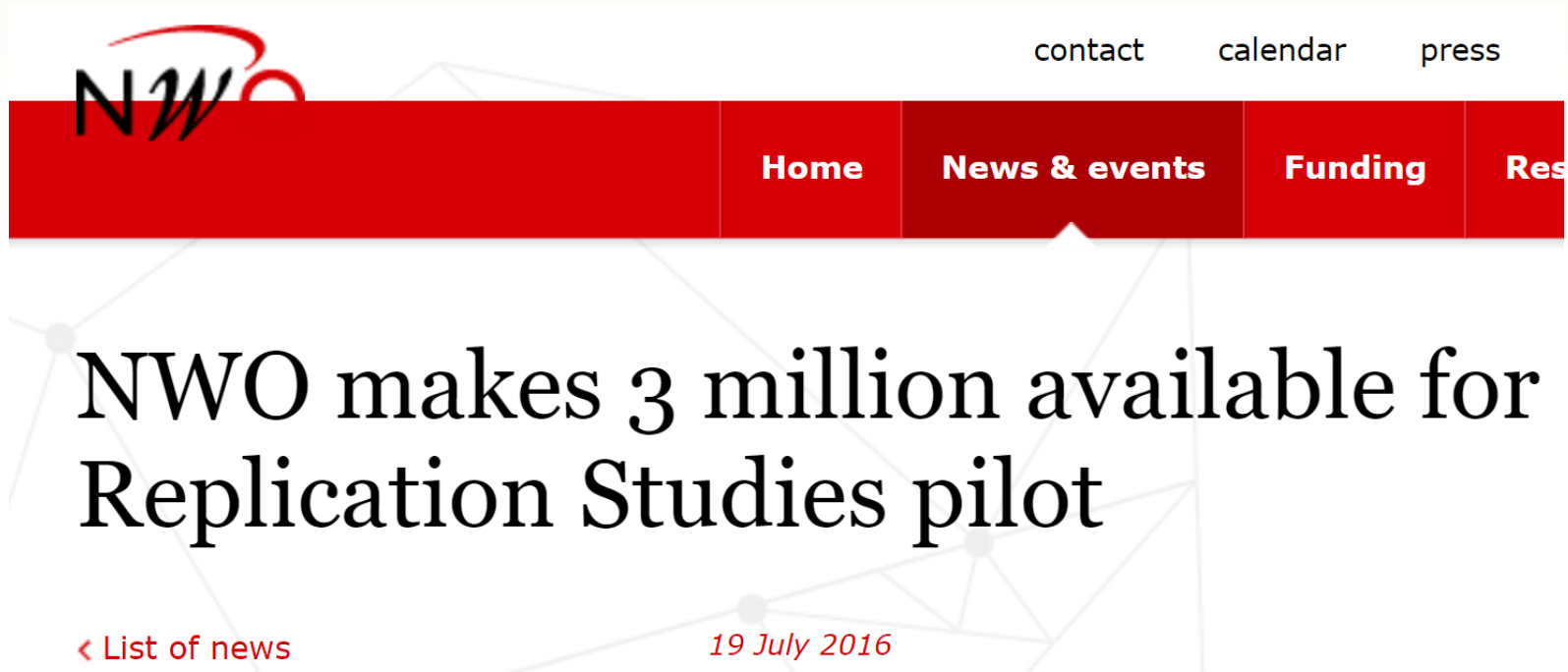
So where are we now and what can be done?

Activities and roles for:

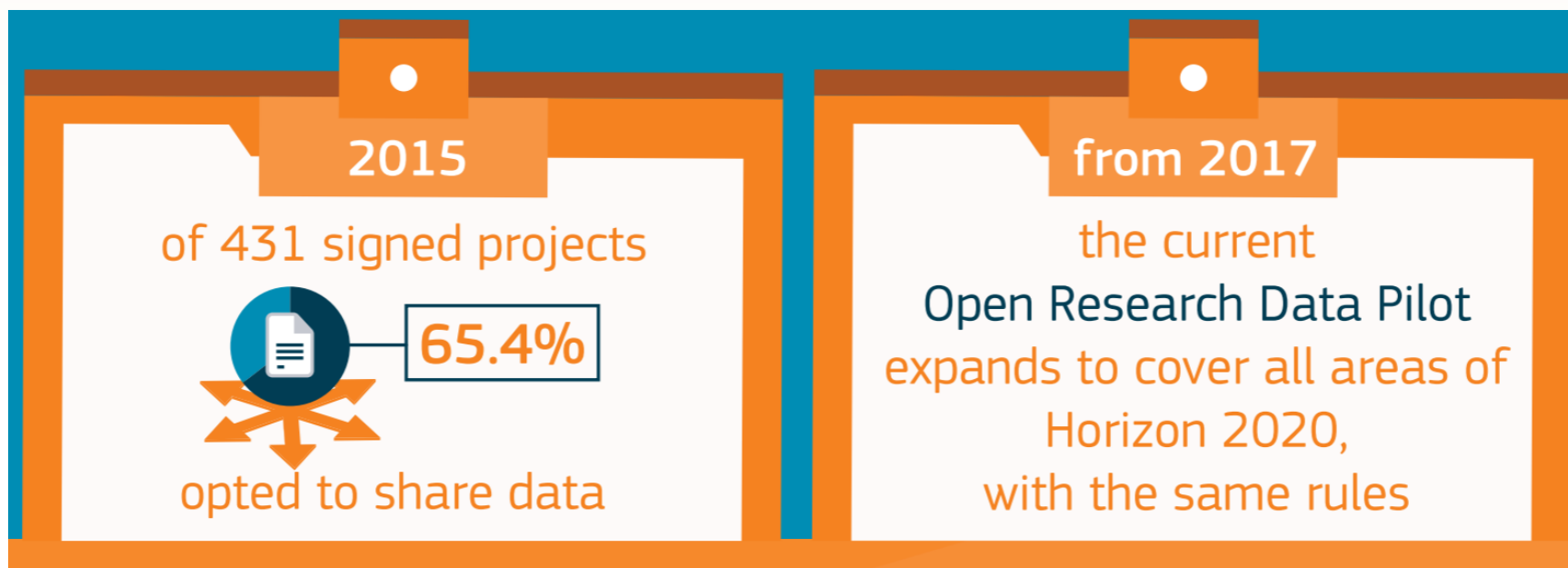
- Funders
- Publishers
- National/international organisations
- Institutions
- Individual researchers



Image from Pixabay, CC0 licence



<http://www.nwo.nl/en/news-and-events/news/2016/nwo-makes-3-million-available-for-replication-studies-pilot.html>





“Publicly funded research data are a public good (...), which should be made openly available with as few restrictions as possible...”

www.rcuk.ac.uk/research/datapolicy

wellcome

Funding What

Open research

In April 2016 we started exploring whether open research should be one of Wellcome’s strategic priorities.

<https://wellcome.ac.uk/what-we-do/our-work/open-research>

Perhaps researchers who share could be better incentivised?

- All previous work made available?
- Commitment to openness assessed at the application stage?



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[Acceptable Data-Sharing
Methods](#)

[Unacceptable Data Access
Restrictions](#)

[Explanatory Notes and
Guidance](#)

[Recommended Repositories](#)

Data Availability

The following policy applies to all PLOS journals, unless otherwise noted.

PLOS journals require authors to make all data underlying the findings described in their manuscript fully available without restriction, with rare exception.

<http://journals.plos.org/plosone/s/data-availability>

OF SCHEMES AND MEMES BLOG

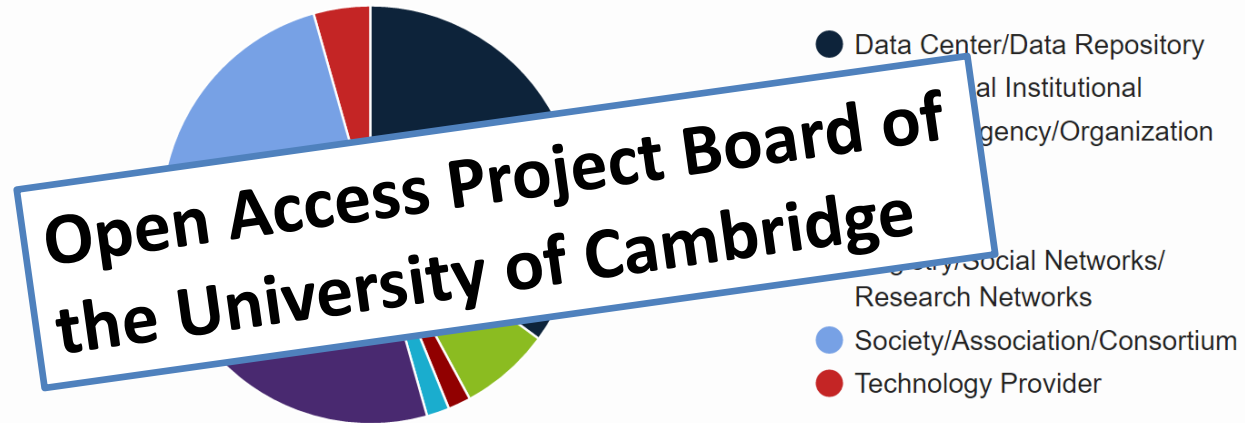
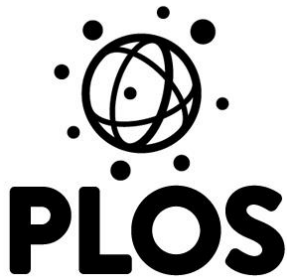
Promoting research data sharing at Springer Nature

05 Jul 2016 | 14:25 GMT | Posted by [Lillienne Zen](#) | Category: [Data policy](#), [Featured](#), [Science communication and outreach](#)

This blog was written by Iain Hrynaszkiewicz, Head of Data Publishing at Springer Nature, in support of the newly launched, company-wide Springer Nature Research Data Policies.

<http://blogs.nature.com/ofschemesandmemes/2016/07/05/promoting-research-data-sharing-at-springer-nature>

ENDORSE THE DATA CITATION PRINCIPLES



<https://www.force11.org/datacitation/endorsements>

- Data citation?
- In house data experts?



Integrated, collaborative, cost-effective approaches



European Open Science Cloud

11 October 2016 – first report from the High Level Expert Group

<http://ec.europa.eu/research/openscience/index.cfm?pg=open-science-cloud>

National and international organisations

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Integrated, collaborative, cost-effective approaches

Research data shared service

Advancing research data management through collaboration

Jisc

Cambridge is part of this project



<https://www.jisc.ac.uk/rd/projects/research-data-shared-service>

Empowering researchers – be democratic

Could Open Research benefit Cambridge University researchers?

🕒 August 3, 2016 📁 Uncategorized 🔖 open access, Open Research, pre-prints, reproducibility, research data management

This blog is part of the recent [series about Open Research](#) and reports on a discussion with Cambridge researchers held on 8 June 2016 in the Department of Engineering. Extended notes from the meeting and slides [are available at the Cambridge University Research Repository](#). This report is written by Lauren Cadwallader, Joanna Jasiewicz and Marta Teperek (listed alphabetically by surname).

At the Office of Scholarly Communication we have been thinking for a while about **Open Research ideas** and about moving beyond mere compliance with funders' policies on Open Access and research data sharing. We thought that the time has come to ask our researchers what they thought about opening up the research process and sharing more: not only publications and research data, but also protocols, methods, source code, theses and all the other elements of research. Would they consider this beneficial?

Working together with researchers – democratic approach to problem-solving

<https://unlockingresearch.blog.lib.cam.ac.uk/?p=817>



Image from Pixabay, CC0 licence

Data sharing in Cambridge is easy

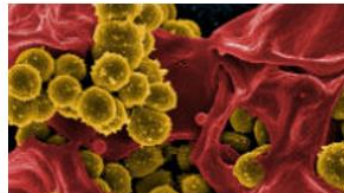
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Apollo - University of Cambridge Repository

This repository holds the research output of members of the University of Cambridge. It is delivered and managed by the University Library's [Office of Scholarly Communication](#) team.



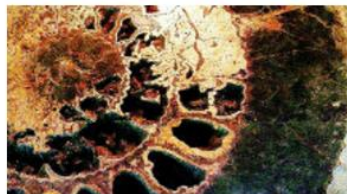
School of Arts and Humanities



School of Clinical Medicine



School of Technology



School of the Biological Sciences



School of the Humanities and Social Sciences



School of the Physical Sciences



Colleges



Other Communities

Share your
research

www.repository.cam.ac.uk

Each dataset gets its own record

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Research data supporting "Hierarchical Self-Assembly of Cellulose Nanocrystals in a Confined Geometry"



View / Open Files

- 1-phase-diagram.zip (application/zip, 4 Mb)
- 2-pom.zip (application/zip, 10Mb)
- 3-sem.zip (application/zip, 6Mb)
- 4-pitch.zip (application/zip, 542Kb)
- 5-afm.zip (application/zip, 358Kb)
- 6-droplet-size.zip (application/zip, 503Kb)
- 7-simulation.zip (application/zip, 470Kb)
- description-data.pdf (PDF, 58Kb)

Authors

Parker, Richard M.
 Frka-Petescic, Bruno
Guidetti, Giulia
Kamita, Gen
Consani, Gioele
Abell, Chris
Vignolini, Silvia

Publication Date

2016-08-17

Publisher

University of Cambridge

Type

Dataset

Metadata

Show full item record

Citation

Parker, R. M., Frka-Petescic, B., Guidetti, G., Kamita, G., Consani, G., Abell, C., & Vignolini, S. *Research data supporting "Hierarchical Self-Assembly of Cellulose Nanocrystals in a Confined Geometry"* [dataset]. <http://dx.doi.org/10.17863/CAM.1233>

Description

Supporting data for the article titled "Hierarchical Self-Assembly of Cellulose Nanocrystals in a Confined Geometry". The article was accepted for publication in 2016 in the journal "ACS Nano". Electronic supporting Information is available from the publisher (ACS). The data is provided with a description in pdf and a structured set of seven folders compressed in zip, each correlating to a specific data type presented in the published article. The spreadsheet used to plot Figure S12 in the ESI is also included. Folder 1: Phase diagram - containing png of the pictures, as well as a txt, xlsx and pdf of the measurements (Figure S12). Folder 2: Polarised optical microscopy (POM) - containing png pictures with scale-bars Folder 3: Scanning electron microscopy (SEM) - original images in tif (figure S11) Folder 4: Cholesteric pitch determination - data in xlsx and pdf of the Figures 3, S9, S10, S16 Folder 5: Atomic force microscopy (AFM) - svg of the AFM and png of the length distribution analysis (Figure S1) Folder 6: Droplet size determination - data in xlsx and pdf of the droplet size distribution (Figure S17) and evaporation rate (Figure S18) Folder 7: Simulation of cholesteric droplets - png of the simulation with computing parameters in txt (Figure 2), data in xlsx and pdf of optical indices from Bruggeman method (Figure S19), matlab folder with codes in m format.

File formats and software

Microsoft Office 2007 or later, Acrobat reader, Matlab

Subjects

liquid crystals, microfluidics, colloidal self-assembly, cellulose nanocrystals, hierarchical architecture

Relationships

Publication Reference:

<http://dx.doi.org/10.1021/acsnano.6b03355>

Sponsorship

BBSRC [BB/K014617/1], Isaac Newton Trust Cambridge [76933], European Research Council [ERC-2014-STG H2020 639088]

Identifiers

This record's DOI:

<http://dx.doi.org/10.17863/CAM.1233>

<http://dx.doi.org/10.17863/CAM.1233>

Should commitment to sharing be a criterion for academic promotion and employment?

Changing hiring practices towards research transparency: The first open science statement in a professorship advertisement

January 6, 2016 Filed in: [Open Science](#) | [Science](#)

Engaging in open science practices increases knowledge as a common good, and ensures the reproducibility, verifiability and credibility of research. But some have the fear that on an individual strategic level (in particular from an early career perspective) engaging in research transparency could reduce a researcher's chance to get a tenured

<http://www.nicebread.de/open-science-hiring-practices/>

Ideas and results need to be shared to move human knowledge forward

Publications without supporting data (and code!)
are just claims

We live in a digital world, so research data (and code!) can be shared

Researchers – lead by example


OSC

Manage your data well

Share your research

Image from Pixabay, CC0 licence

Researchers – lead by example

**Erin McKiernan**
@emckiernan13

Following


#OpenInAction: I pledge to publish only in **#openaccess** journals, + share my preprints, code, data, etc.
emckiernan.wordpress.com/pledge/ **#OAWeek**

I pledge to:

- edit and review only for open access journals
- publish only in open access journals
- openly share my working manuscripts
- openly share my code, when possible
- openly share my data, when possible
- openly share my notebooks, when possible
- ask my professional societies to support open research
- speak out in support of open research

RETWEETS
31

LIKES
40



8:16 AM - 25 Oct 2016

<https://emckiernan.wordpress.com/pledge/>

New Year's Resolutions: My Open Pledge

JANUARY 5, 2016 / HEIDI LAINE

Ever since I heard Erin McKiernan [telling about](#) her [Open Pledge](#) at the 2015 OpenCon I have been thinking about making my own. It seems only appropriate to publish it at the beginning of a new year. In addition to McKiernan I have been inspired for example by the [Open Science Peer Review Oath](#) and the responsible conduct of research [guidelines](#) I'm studying.

*My research is open by default.**

I will not be open at the cost of my research subjects privacy; when in doubt I will refrain from publishing.

<https://thehonestbrokerblog.org/2016/01/05/new-years-resolutions-my-open-pledge/>



Would you like to become a Data Champion?

We are looking for people who would like to volunteer to become Data Champions within their departments, institutes and colleges to provide local expertise about Research Data Management (RDM) issues.

Who can become an Data Champion?

Anyone interested in research data management and sharing who would like to become the local expert on RDM. We welcome researchers, students, librarians, IT managers, data

<http://www.data.cam.ac.uk/datanews/call-data-champions>

Cultural change is achievable

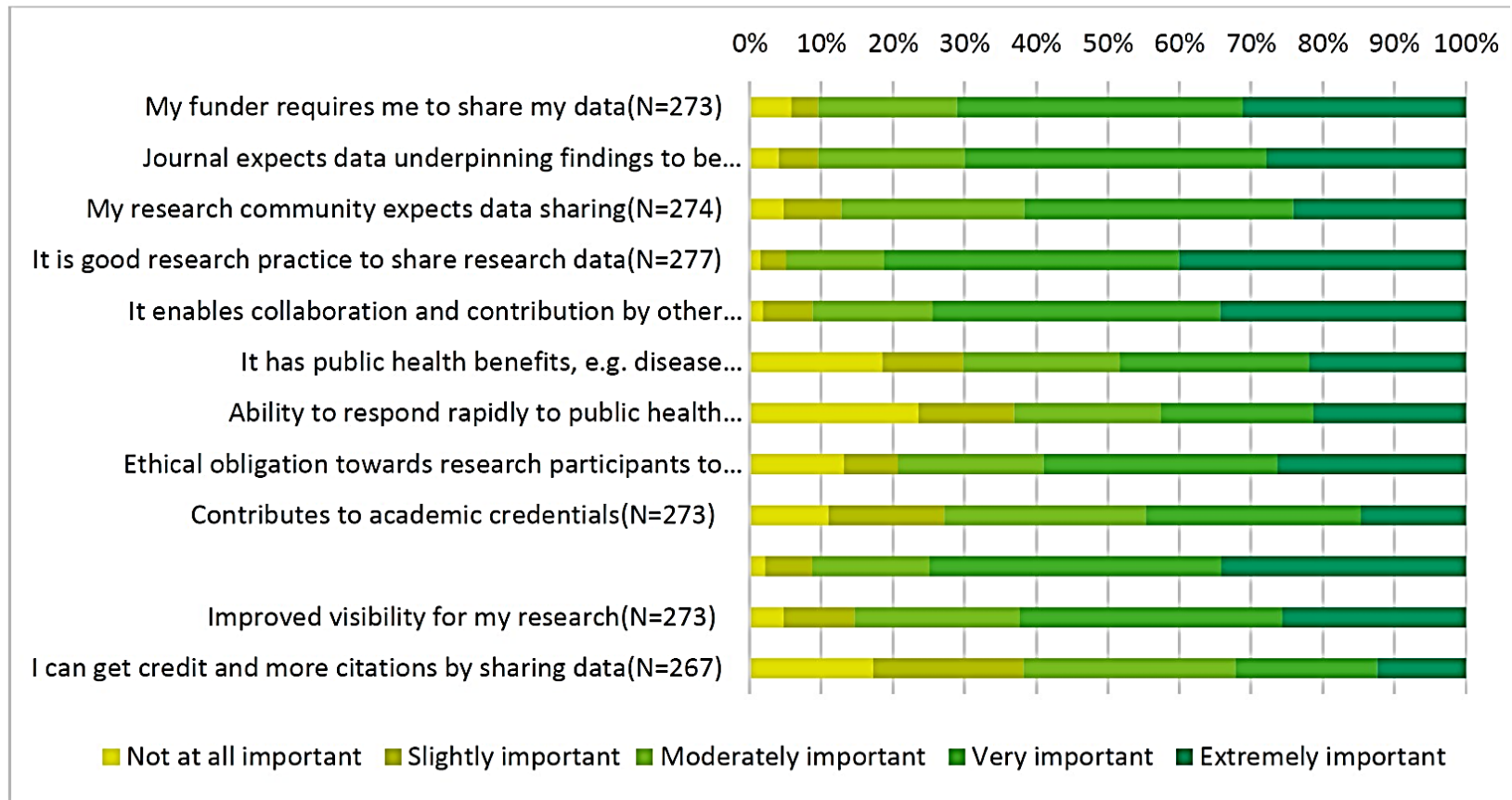
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Image from Pixabay, CC0 licence

Wellcome Trust funded researchers share because it is a good thing

FIGURE 14. REASONS FOR MAKING RESEARCH DATA AVAILABLE



https://figshare.com/articles/Survey_of_Wellcome_researchers_and_their_attitudes_to_open_research/4055448/1

Everyone can contribute to sharing

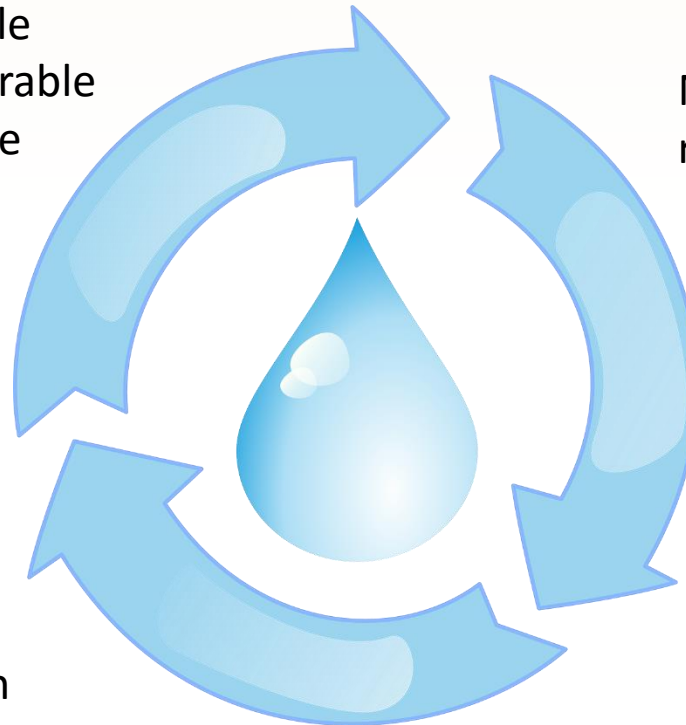
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Shares data FAIRly:

- Findable
- Accessible
- Interoperable
- Re-usable

Data producer

Funding for
new research



Data validation

New hypotheses and new
research

Data re-user

Data citation

Recognition
and reward

Cambridge & Wellcome Trust are calling for Open Research experiment participants



Open Research Pilot Project - call for participants - applications close on Sunday 11 December

Are you in favour of more transparency in research? Are you concerned about research reproducibility? Would you like to get better recognition and credit for all outputs of your research process? Would you like to open up your research and make it more available to others?

If you responded 'yes' to any of these questions, we would like to invite you to participate in the Open Research Pilot Project, organised jointly by the [Open Research team at the Wellcome Trust](#) and the [Office of Scholarly Communication](#) at the University of Cambridge.

What is the Open Research Pilot Project?

The Open Research Pilot Project is a two year long project which will look at gaining an

<http://www.data.cam.ac.uk/datanews/call-participants-open-research-pilot-project>

Thank you

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 OPEN DATA
www.data.cam.ac.uk

 UNIVERSITY OF
CAMBRIDGE

Questions/keep in touch

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

mt446@cam.ac.uk

Slides: <https://doi.org/10.17863/CAM.6416>