5 October 2022

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THE FUTURE IS OPEN

WHY OPEN SCHOLARSHIP IS GOOD FOR YOU AND YOUR CAREER

Hardy Schwamm – Open Scholarship Librarian

@hardyschwamm

ABOUT ME

- Hardy Schwamm, Open Scholarship Librarian
- Started at NUIG in August 2019
- First role of its kind in Ireland
- Member of Open Scholarship Community Galway
- @hardyschwamm on Twitter
- Email me: hardy.schwamm@nuigalway.ie

ABOUT YOU

slido

I see myself primarily as a

ⓘ Start presenting to display the poll results on this slide.

slido

What do you associate with Open Scholarship / Open Science?

ⓘ Start presenting to display the poll results on this slide.

AGENDA

- What is Open Scholarship and why is it important?
- The Pillars of Open Scholarship
- Open Scholarship in action 1: Open Education
- Open Scholarship in action 2: Open Access publishing
- How can I be more Open now?

WHAT IS OPEN SCHOLARSHIP?

- Umbrella term for many Open practices
- Has evolved from a collection of small, localised efforts and practices to a broad international network
- Open Scholarship is made possible through digital technology and can get traced back to early 1990s
- Principal supporters are institutions, organizations, governments, practitioners, advocates, and funders

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Open Terminology

Open Scholarship

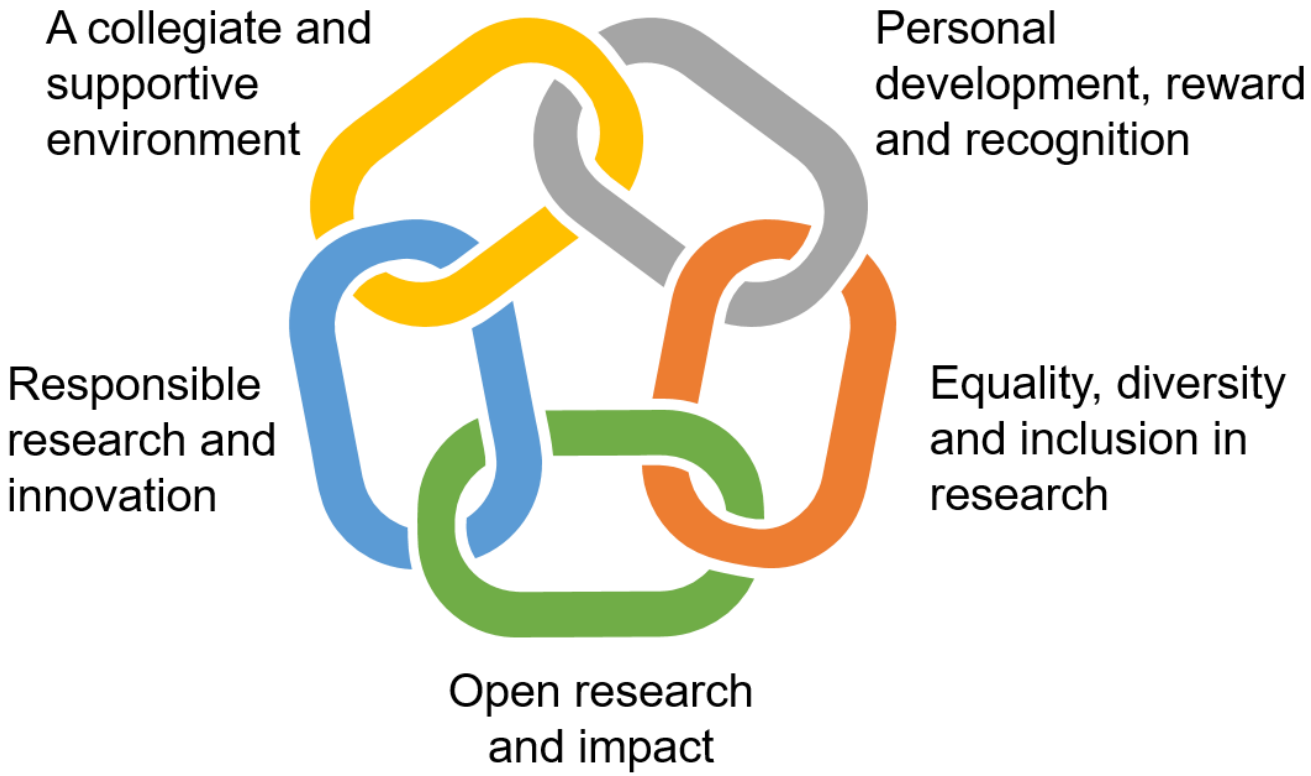
=

Open Research

=

Open Science

OPEN AS PART OF RESEARCH CULTURE



https://researchersupport.leeds.ac.uk/research-culture/

EIGHT OPEN SCIENCE AMBITIONS OF THE EU COMMISSION

The EU's open science policy

8 ambitions of the EU's open science policy

Future of open science under Horizon Europe

Tracking open research trends - Open Science Monitor

Latest

Documents

and its impacts supporting and acknowledging open knowledge practices.

8 ambitions of the EU's open science policy

Open Data

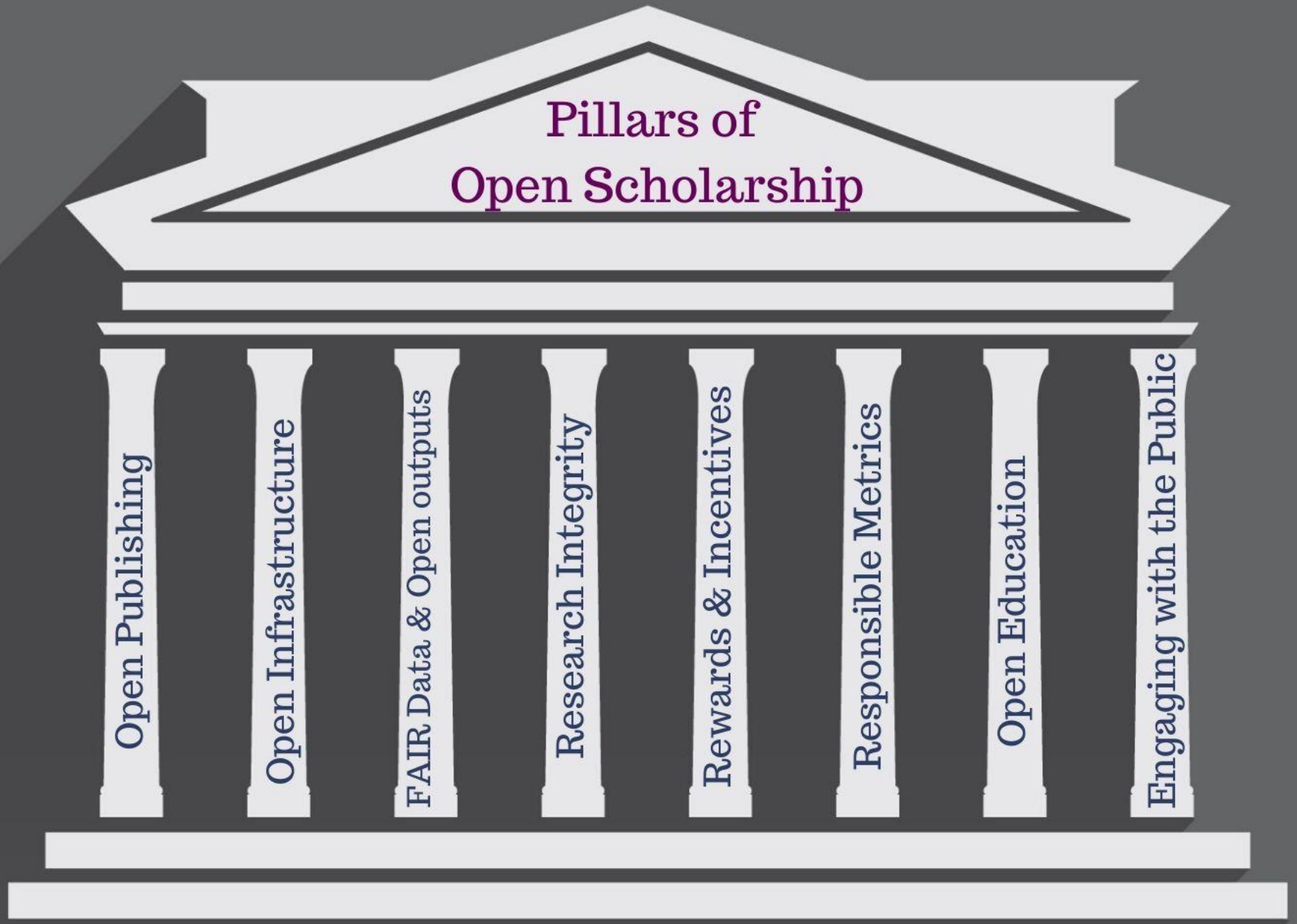
FAIR (Findable, Accessible, Interoperable and Re-usable data) and open data sharing should become the default for the results of EU-funded scientific research.

European Open Science Cloud (EOSC)

The (EOSC is a trusted, virtual, federated environment that cuts across borders and scientific disciplines to store, share, process and reuse research digital objects (like publications, data, and software) that are Findable, Accessible, Interoperable and Reusable (FAIR). EOSC brings together institutional, national and European stakeholders, initiatives and infrastructures.

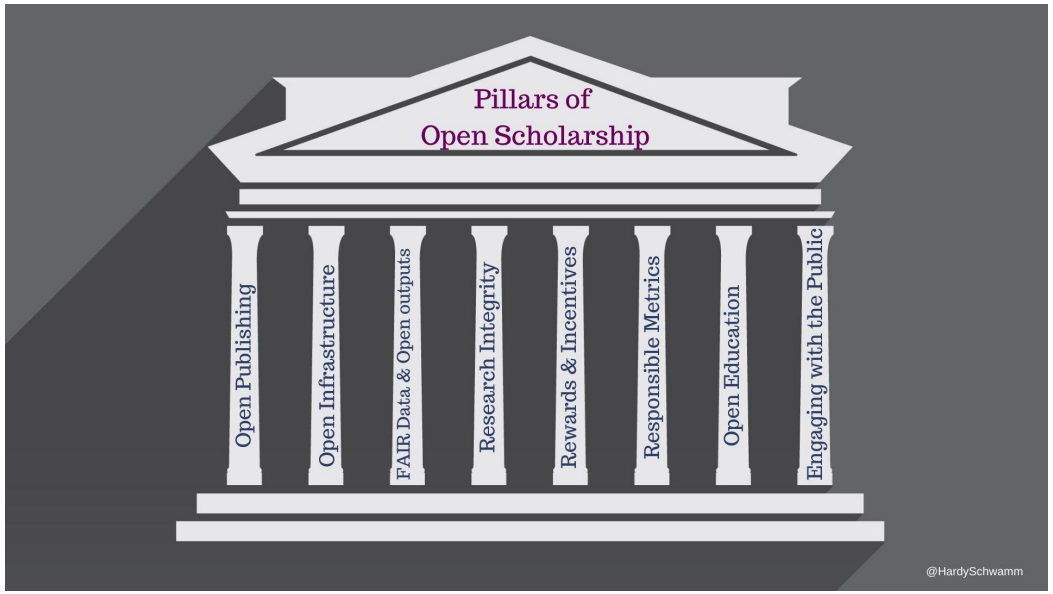
Read more about the EOSC

- Source



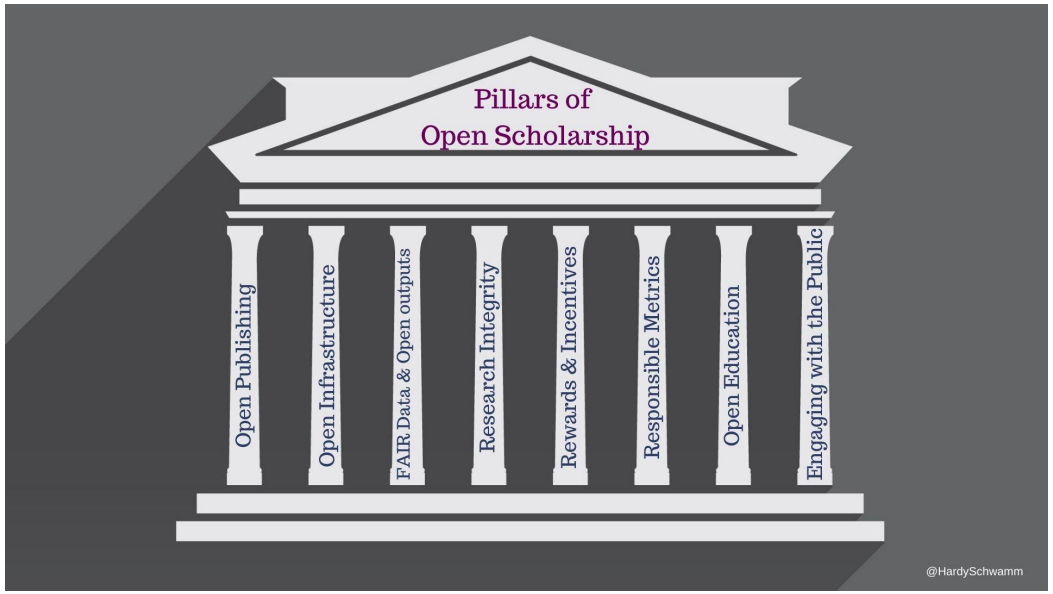
@HardySchwamm

THE EIGHT PILLARS OF OPEN SCHOLARSHIP



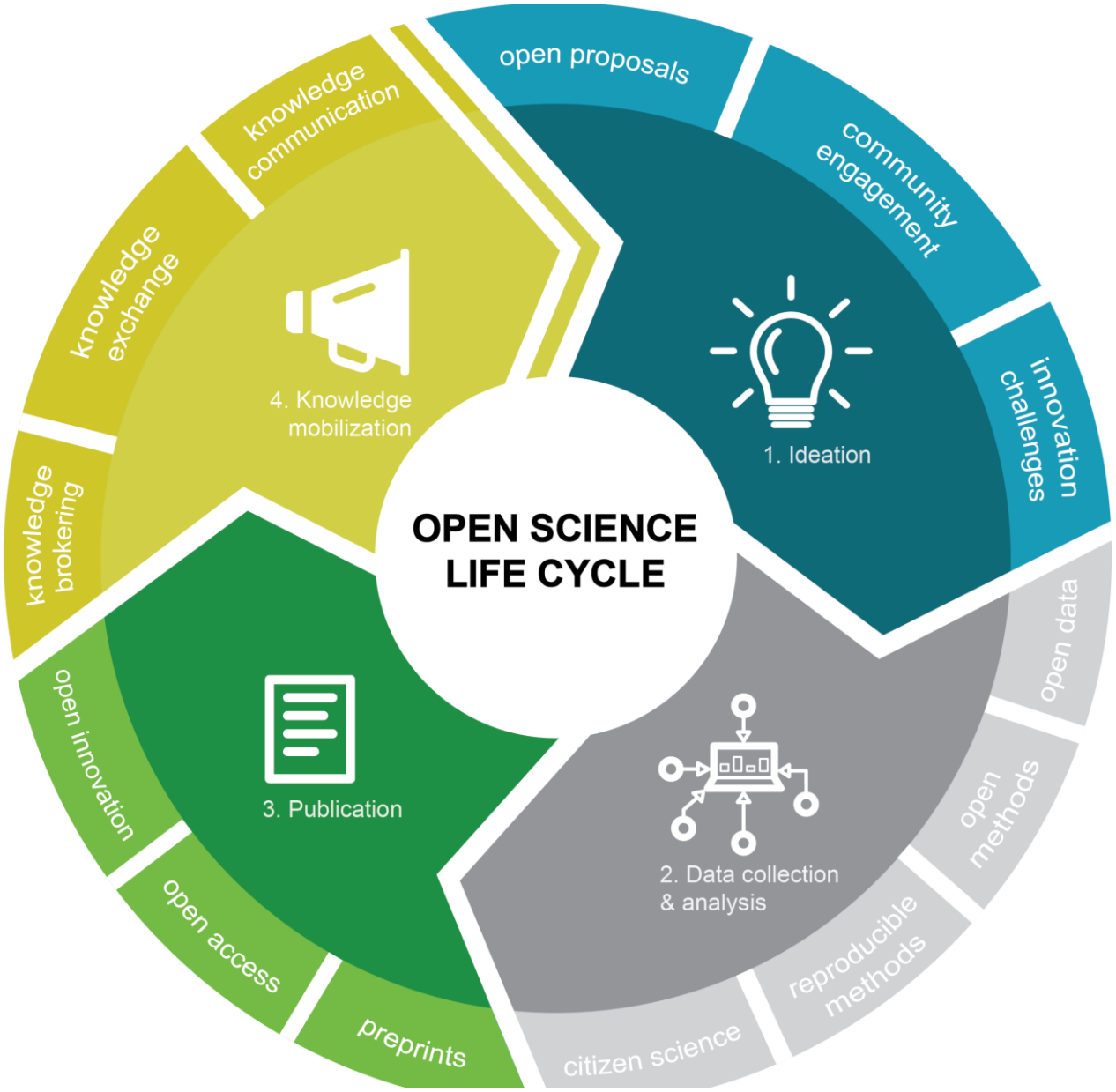
- Open Publishing
- Open Infrastructure
- FAIR Data & Open Publishing
- Research Integrity
- Rewards & Incentives
- Responsible Metrics
- Open Education
- Engaging with the Public (Citizen Science)

THE EIGHT PILLARS OF OPEN SCHOLARSHIP



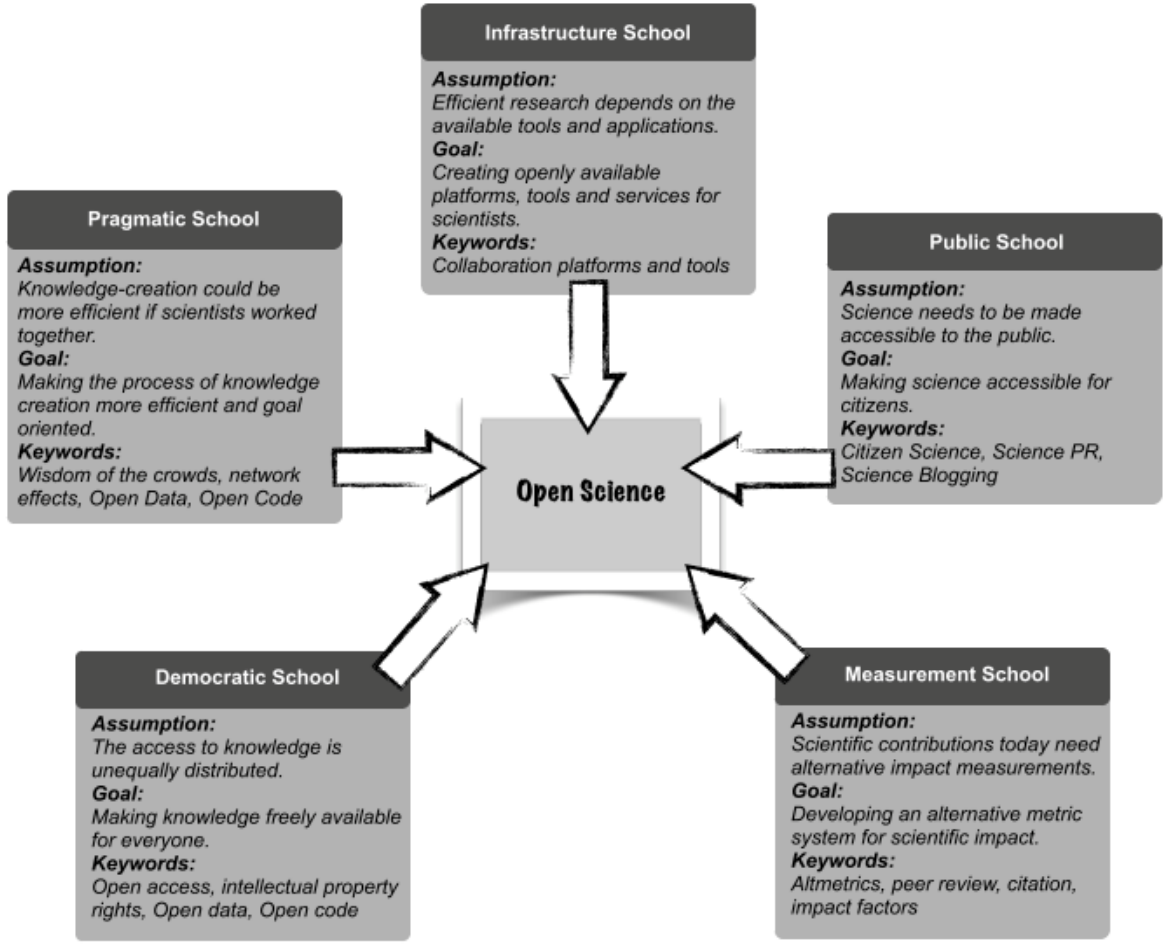
- **Open Publishing**
  - Open Infrastructure
  - FAIR Data & Open Publishing
  - Research Integrity
  - Rewards & Incentives
  - Responsible Metrics
- **Open Education**
  - Engaging with the Public (Citizen Science)

OPENING THE LIFE CYCLE



Source: Government of Canada

FIVE OPEN SCHOLARSHIP SCHOOLS OF THOUGHT

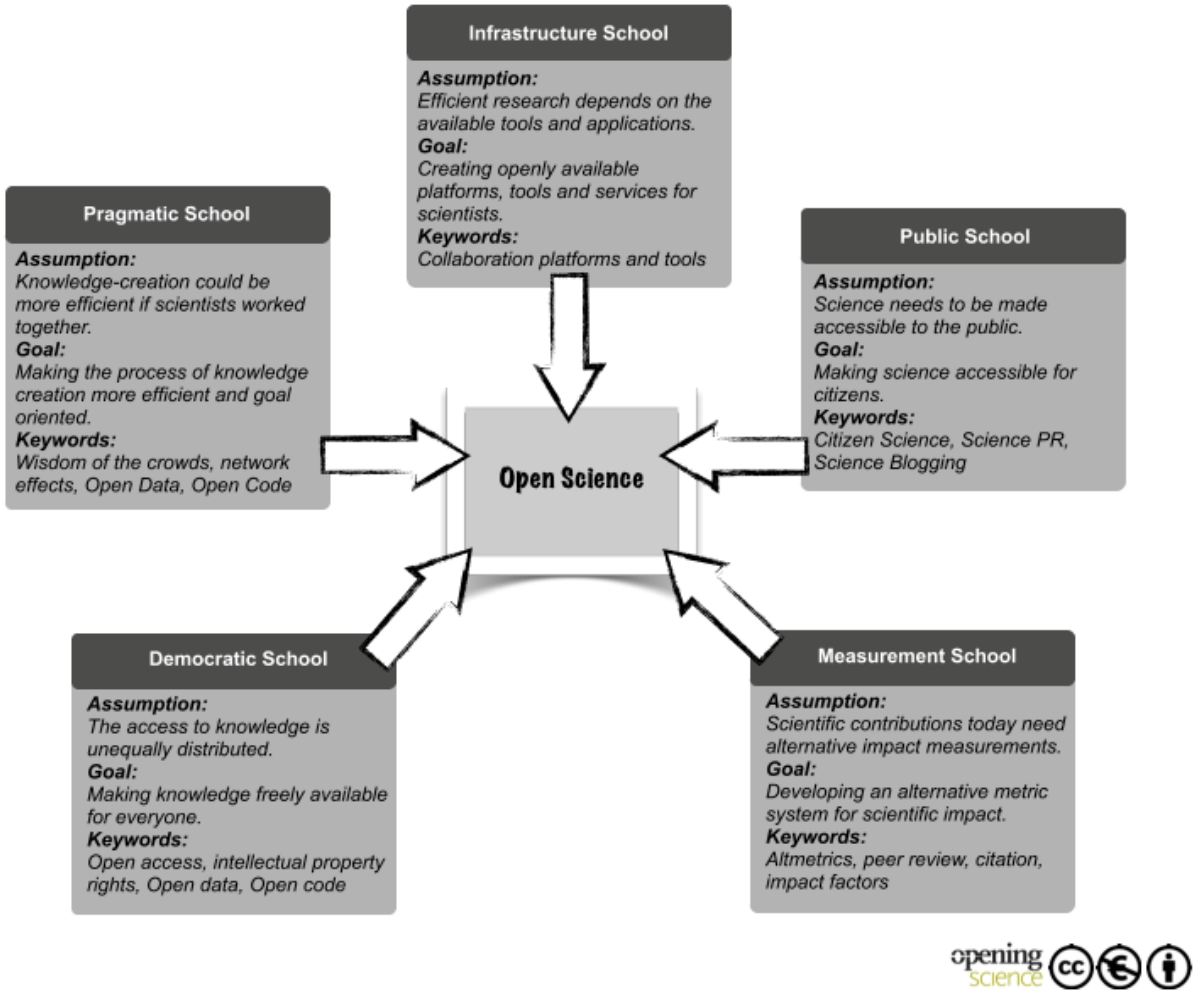


opening science

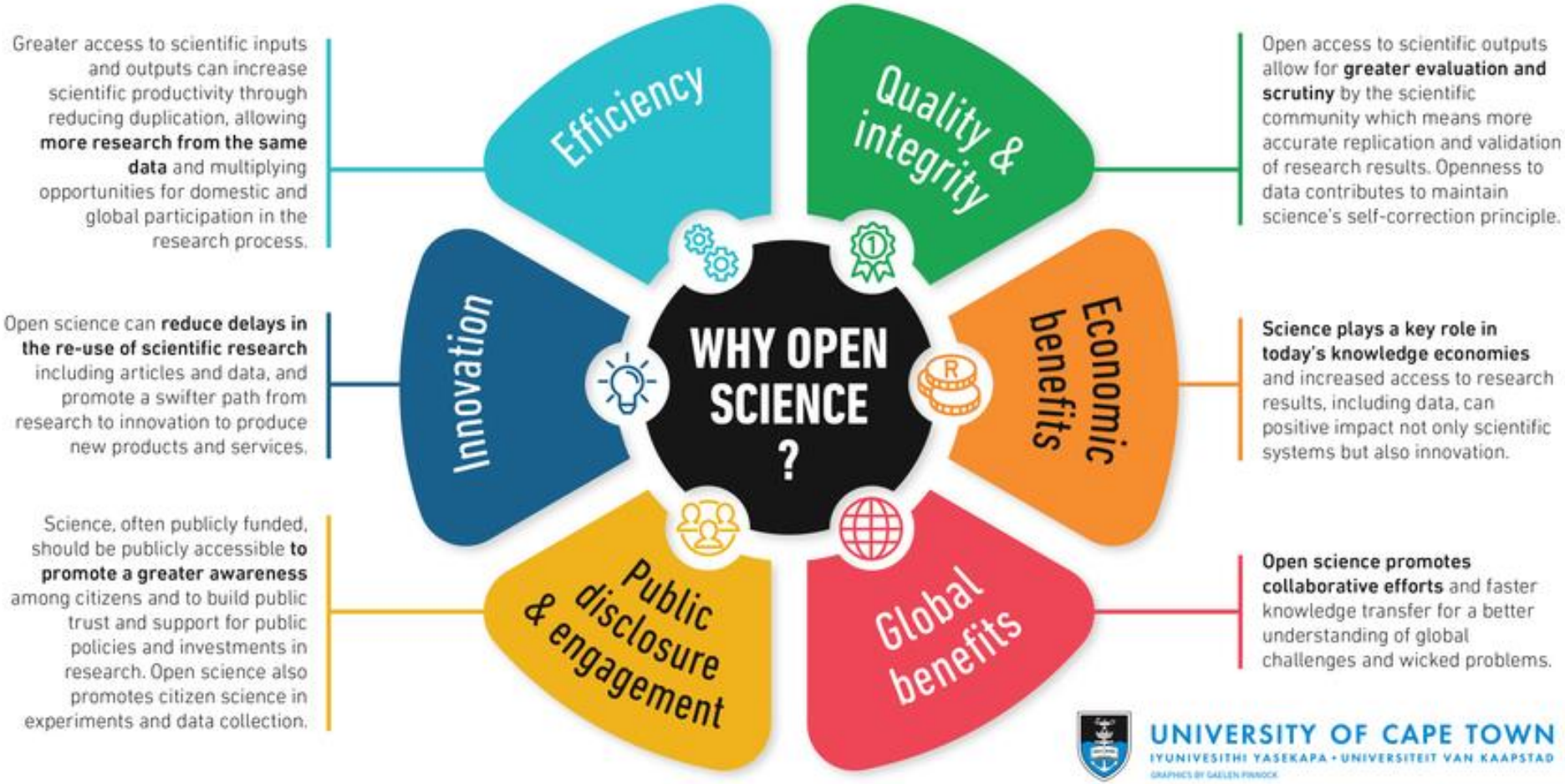
FIVE OPEN SCHOLARSHIP SCHOOLS OF THOUGHT

- Main argument for OS: Scientific knowledge and education is a product of social collaboration and its ownership belongs to the community

1. Easier (Infrastructure)
2. More accessible (Public)
3. Impact (Measurement)
4. More equal (Democratic)
5. More efficient (Pragmatic)



Fecher and Frieseke (2013). Five schools of thought in Open Scholarship. (CC BY-NC)



- Gaelen Pinnock, CC BY-SA 4.0

Open Scholarship broadly refers to the **process**, **communication**, and **re-use** of research and educational material as practised in **any scholarly discipline**, and its inclusion and role **within wider society**.

Adapted from Foundations for Open Scholarship Strategy Development

DEFINITION

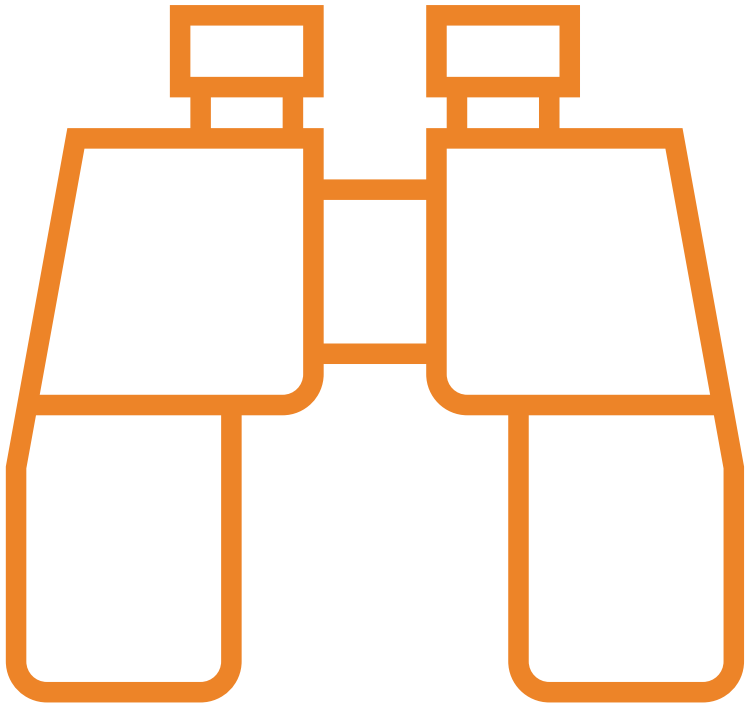
OPEN SCHOLARSHIP RELATES TO:

3

- Research activities
- Educational practices
- Scholarly communications

OPEN SCHOLARSHIP!

BUT WHY NOW?



WHY OPEN SCIENCE?

- Research Transparency
- Reproducibility!

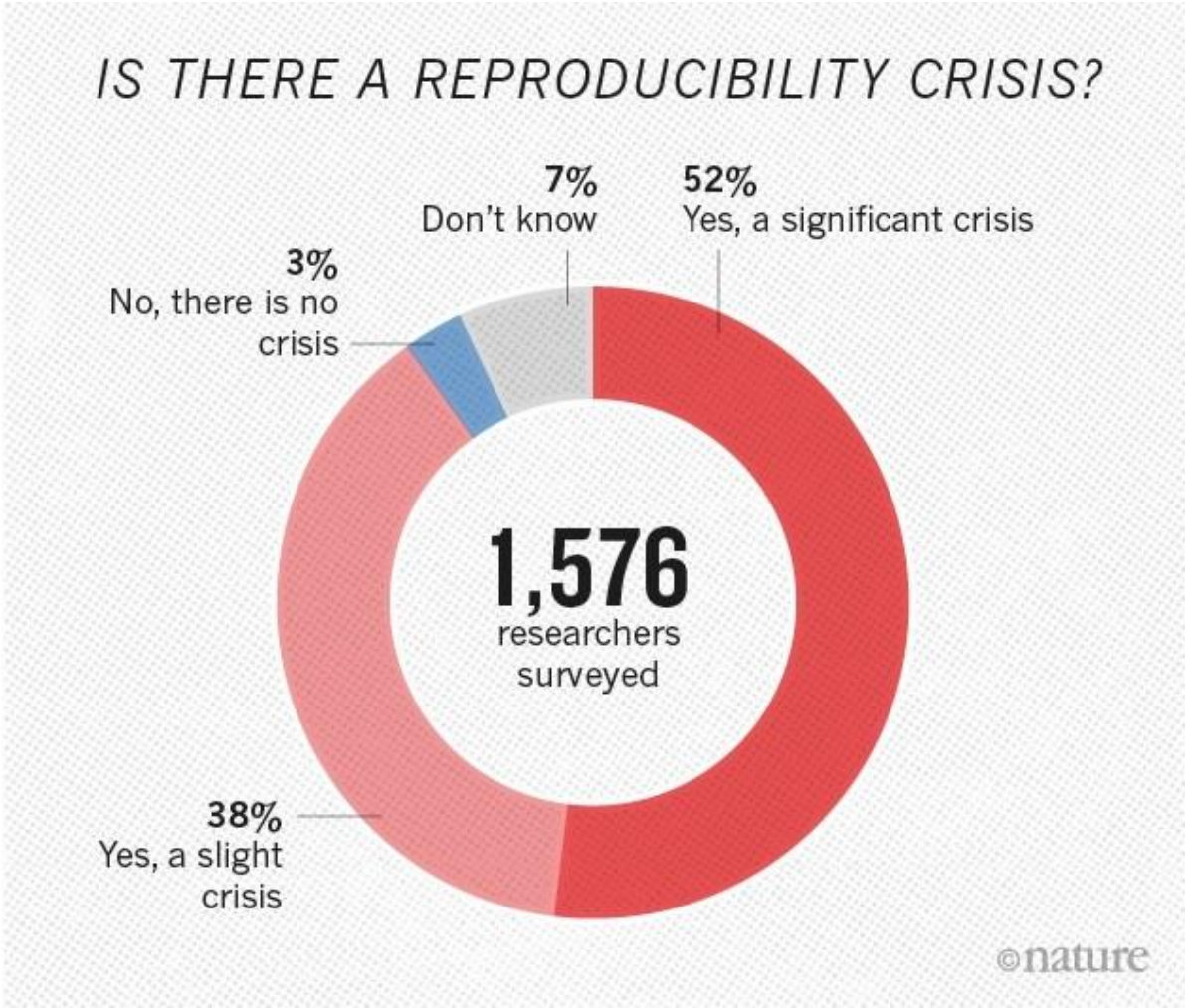
SCIENCE HAS A PROBLEM. EXAMPLE 1: HOW MANY SCIENTISTS COMMIT FRAUD?

1. How many scientists commit to having fabricated or falsified data or sources?
   - One in 1000
   - One in 50
   - One in 10
2. How many scientists believe their colleagues have committed scientific fraud?
   - 3%
   - 9%
   - 14%

FRAUDULENT BEHAVIOUR

- One in 50 (1.97% of scientists) commit to having fabricated or falsified data
- 14.12% believe their colleagues have committed scientific fraud

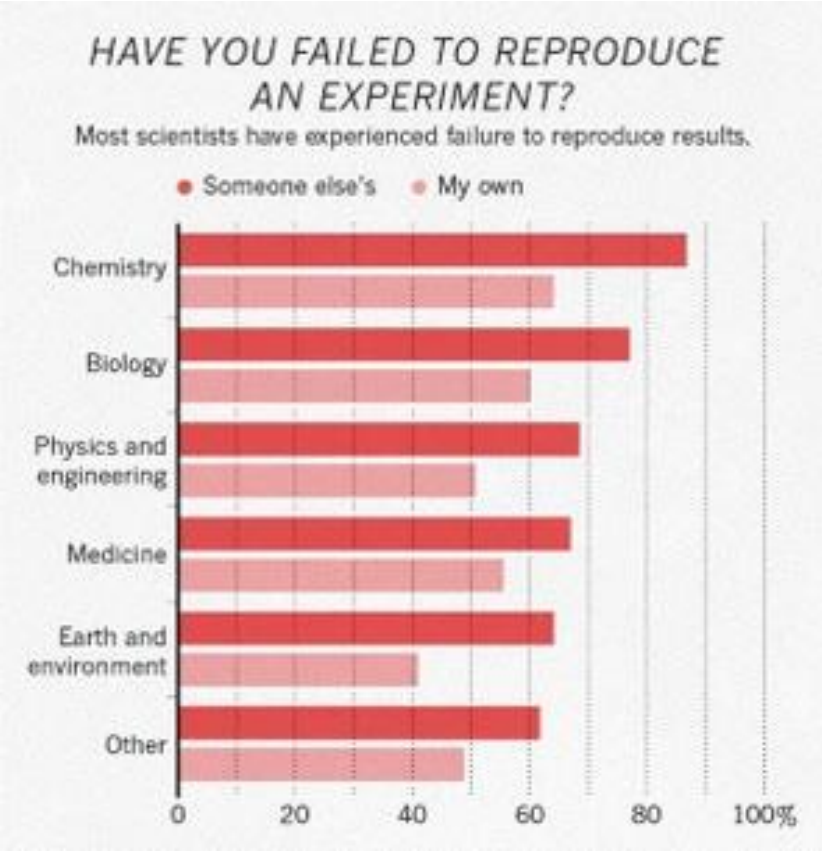
Source:
D Fanelli: How Many Scientists Fabricate and Falsify Research? A Systematic Review and Meta-Analysis of Survey Data. PLOS One, 2009, https://doi.org/10.1371/journal.pone.0005738

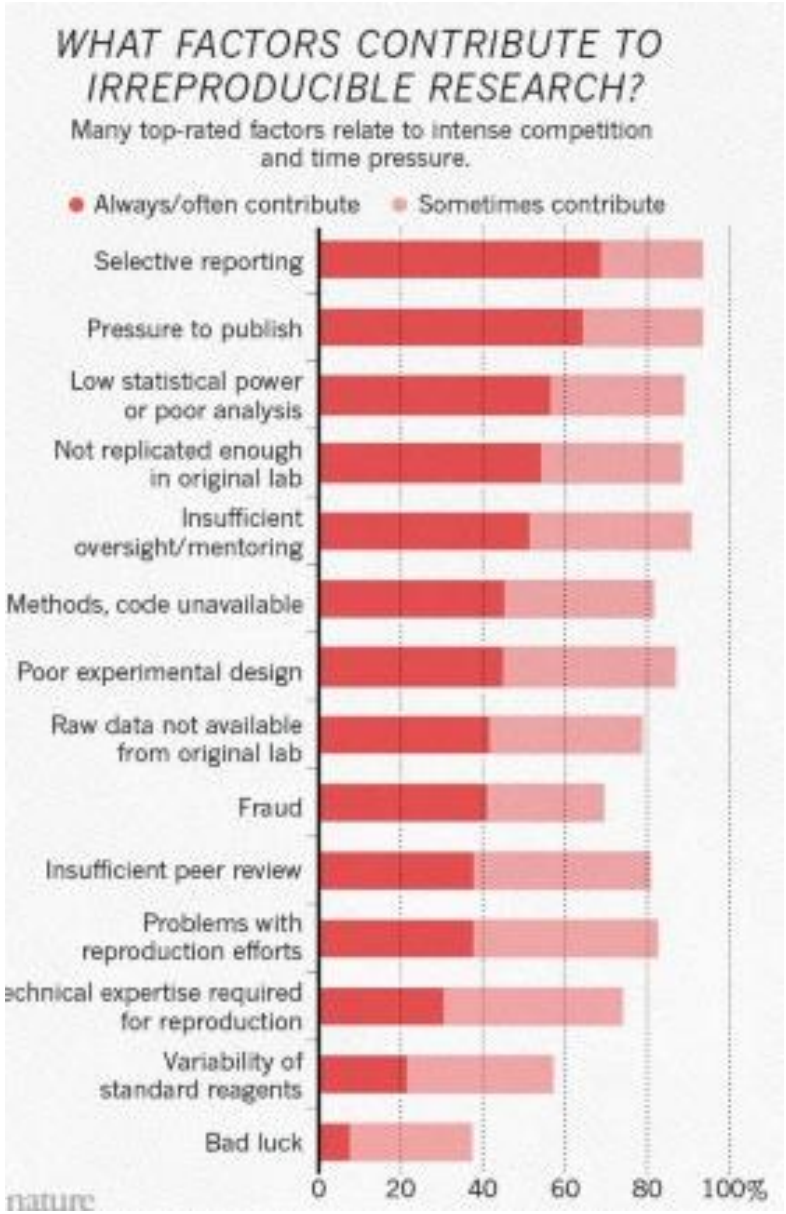


https://www.nature.com/articles/533452a, 2016

REPRODUCIBILITY CRISIS

REPRODUCIBILITY CRISIS IN DETAIL



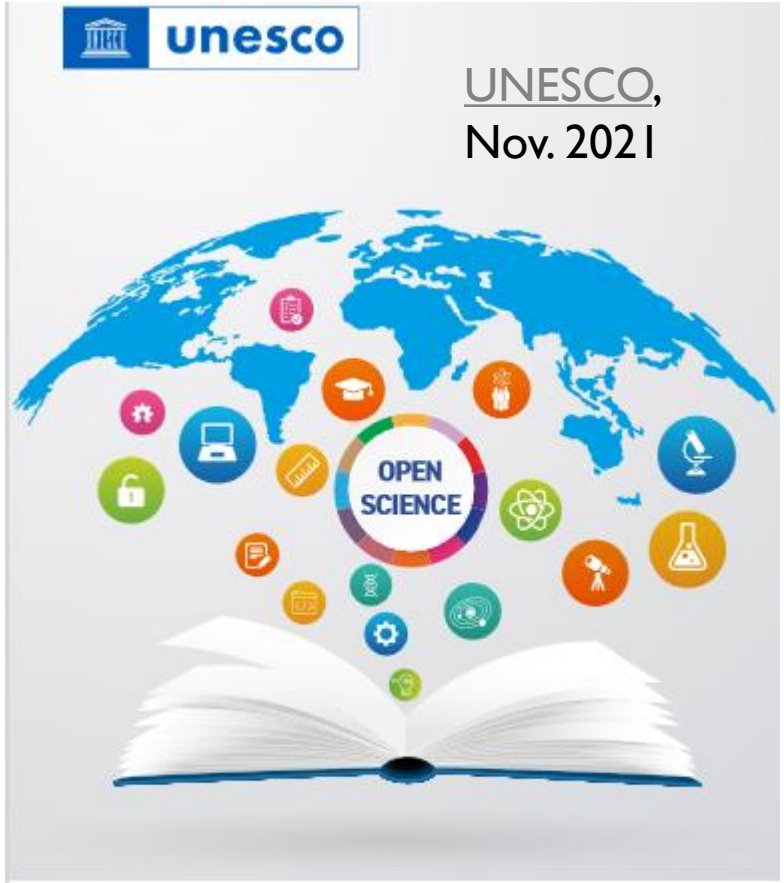


https://www.nature.com/articles/533452a

CURRENT ISSUES WITH SCIENTIFIC PRACTICE AND INTEGRITY

- "Publish or Perish". The need to publish in high impact journals
- Journals only looking for novel topics and positive research outcomes
- The need for citations to prove academic impact
- The temptation to tweak data, results and methods to get the "right" results

DRIVERS OF OPEN SCHOLARSHIP
TOP-DOWN POLICIES

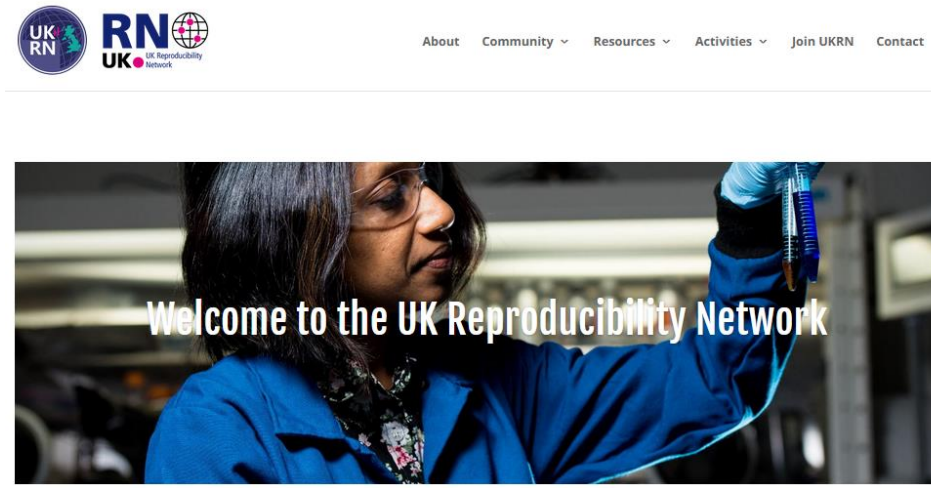


UNESCO, Nov. 2021

EU Commission

UKRI

DRIVERS OF OPEN SCHOLARSHIP BOTTOM UP



UKRN

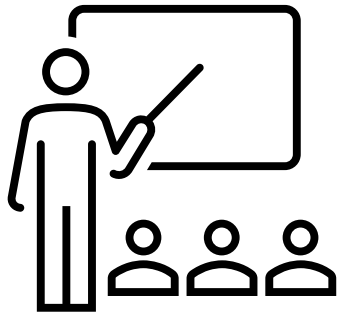
Open Science Communities NL

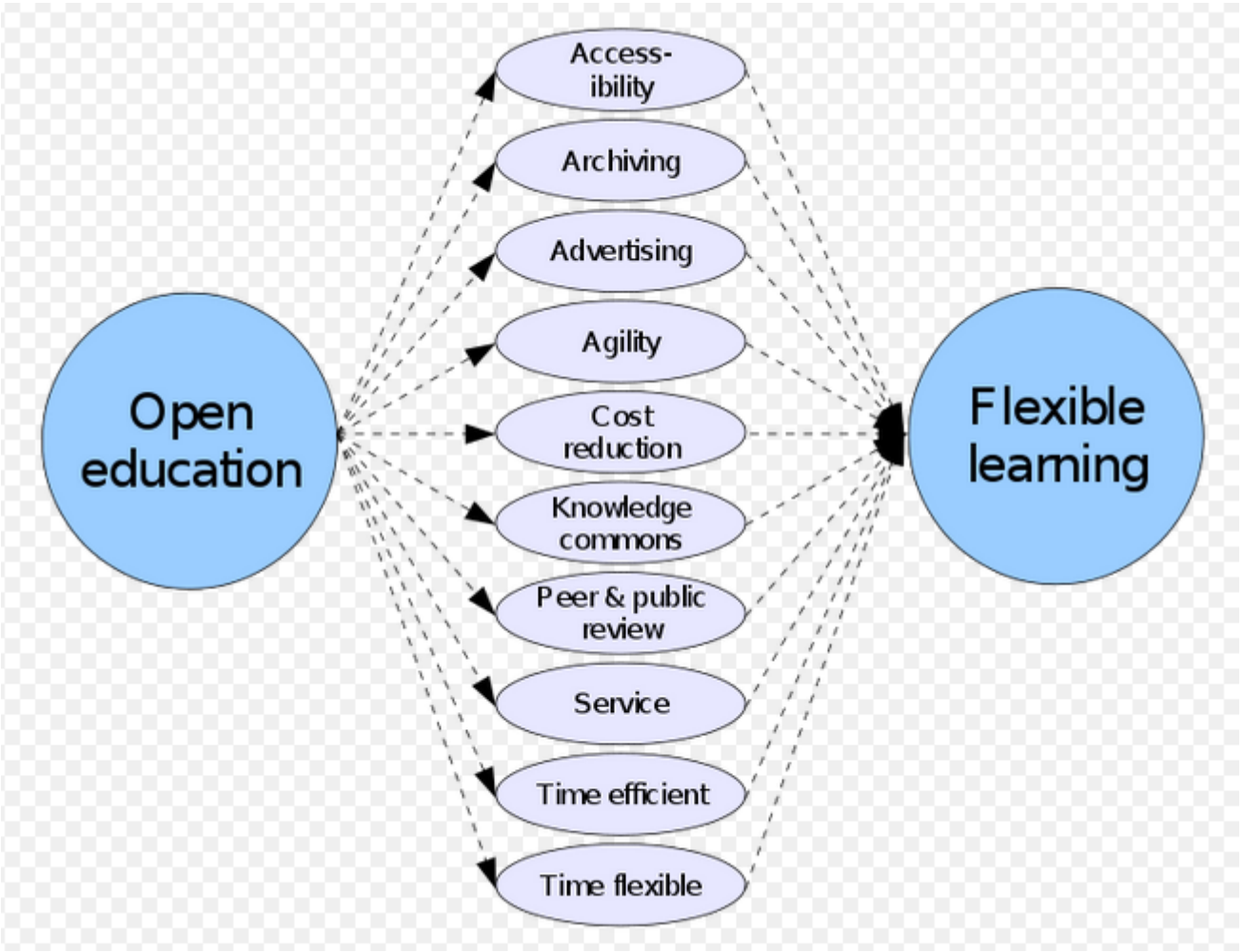
Image CC-BY-ND Anita Eerland

PROSPR – Promoting Open Science Practices Lancaster University

OPEN SCHOLARSHIP IN ACTION

OPEN EDUCATIONAL RESOURCES





WHY OPEN EDUCATION?

Access, Flexibility & Inclusion

By Jtneill, CC BY-SA 3.0,
https://commons.wikimedia.org/w/index.php?curid=25155477

THE UNIVERSAL DECLARATION OF HUMAN RIGHTS

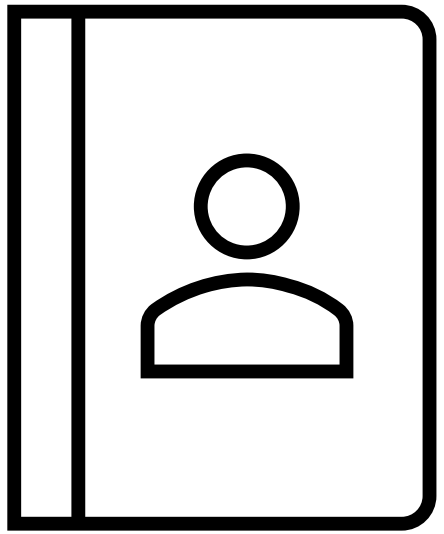
"Higher education shall be equally accessible to all"

Article 26 of The Universal Declaration of Human Rights

OPEN EDUCATION

- Part of a broader movement related to the openness of teaching methods and the promotion of learner autonomy
- Favours widening participation and inclusiveness in society
- Education for all: with free or very low cost

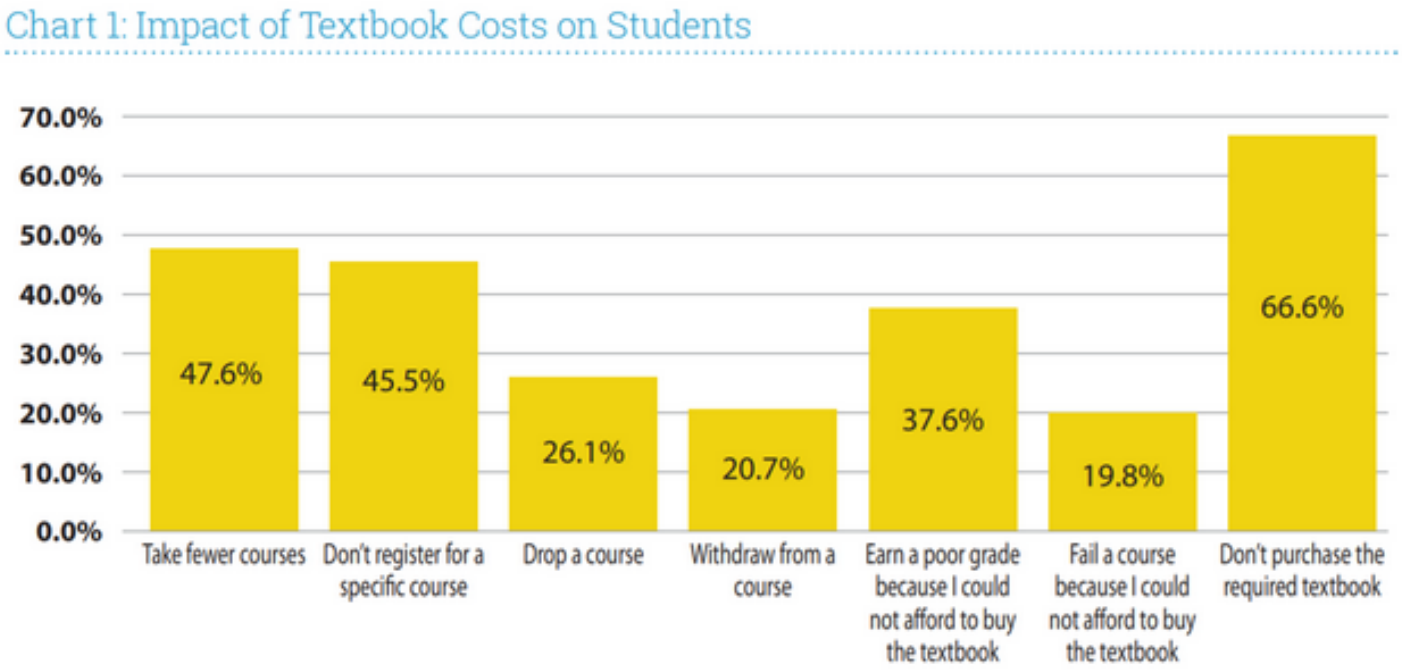
CURRENT REALITY

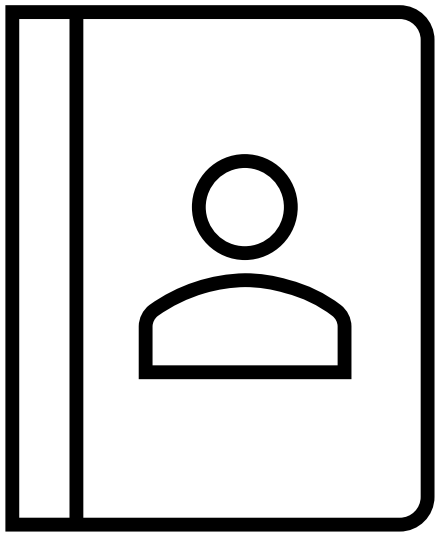


- Educational materials market is held captive by legacy publishing models
- Many students are without access to their required materials
- Students are expected to spend £60 per month on textbooks
- Libraries cannot afford to buy all ebooks that are needed (see ebooks SOS campaign)

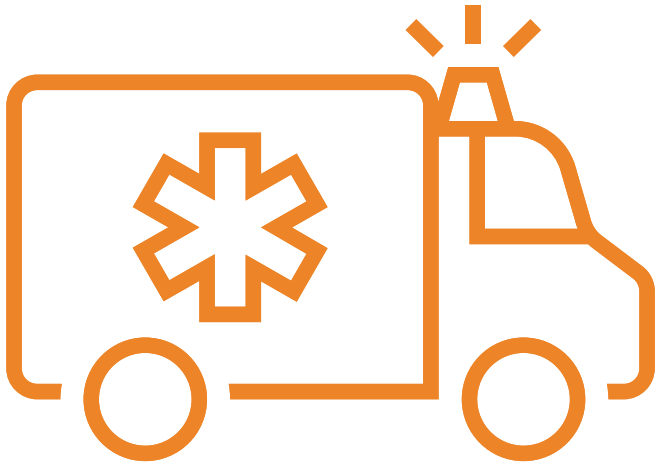
IMPACT OF HIGH COST EDUCATIONAL MATERIAL ON STUDENTS

- In 2020, 65 percent of students surveyed reported skipping buying a textbook because of cost (Source)



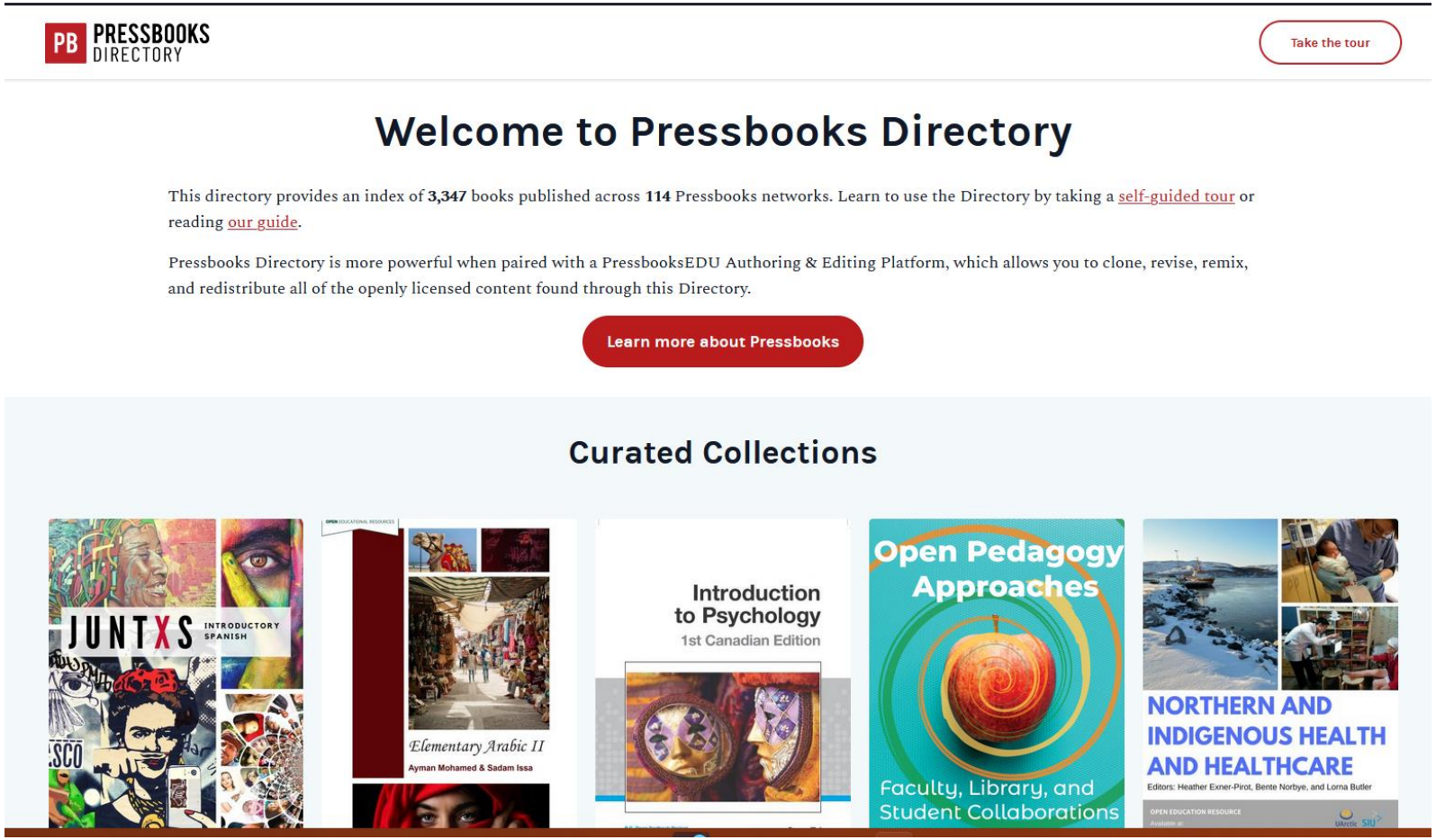


Source: https://guides.library.vcu.edu/acc/socialjustice



- Open textbooks are free academic texts published with an open copyright licence.
- They can contain a mix of different formats, such as text and interactive video.
- They can be adapted and modified to suit particular courses or modules.
- Open textbooks are sometimes but not always peer-reviewed

OPEN TEXTBOOKS TO THE RESCUE



PRESSBOOKS

https://pressbooks.directory/

Open Textbook Library

Search the Library GO

Browse Subjects | About Open Textbooks | Submit | Discovery | Open Education Network

The Open Textbook Library is turning 10, and you're invited to the birthday bash! Join us in celebrating this milestone along with higher education's increasing engagement with open educational resources and practices over the past decade. Thursday, April 14, 2-3 pm CT Register: https://z.umn.edu/otl10

Transform Higher Education and Student Learning

Open textbooks are licensed by authors and publishers to be freely used and adapted. Download, edit and distribute them at no cost.

Now offering 1006 open textbooks, the Open Textbook Library is supported by the Open Education Network.

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OPEN SCHOLARSHIP IN ACTION

OPEN ACCESS PUBLISHING

Wiley Online Library

Search

PLASMA PROCESSES AND POLYMERS

FULL PAPER

The chemistry and topography of stabilized and functionalized graphene oxide coatings

Firas Awaja, Manoj Tripathi, Tsz-Ting Wong, Timothy O'Brien, Giorgio Speranza

First published: 01 August 2018 | https://doi.org/10.1002/ppap.201800084 | Citations: 8

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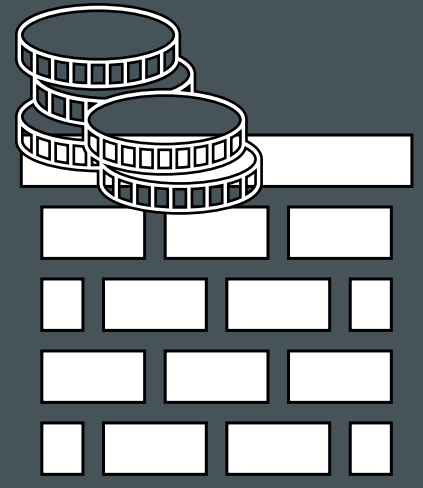
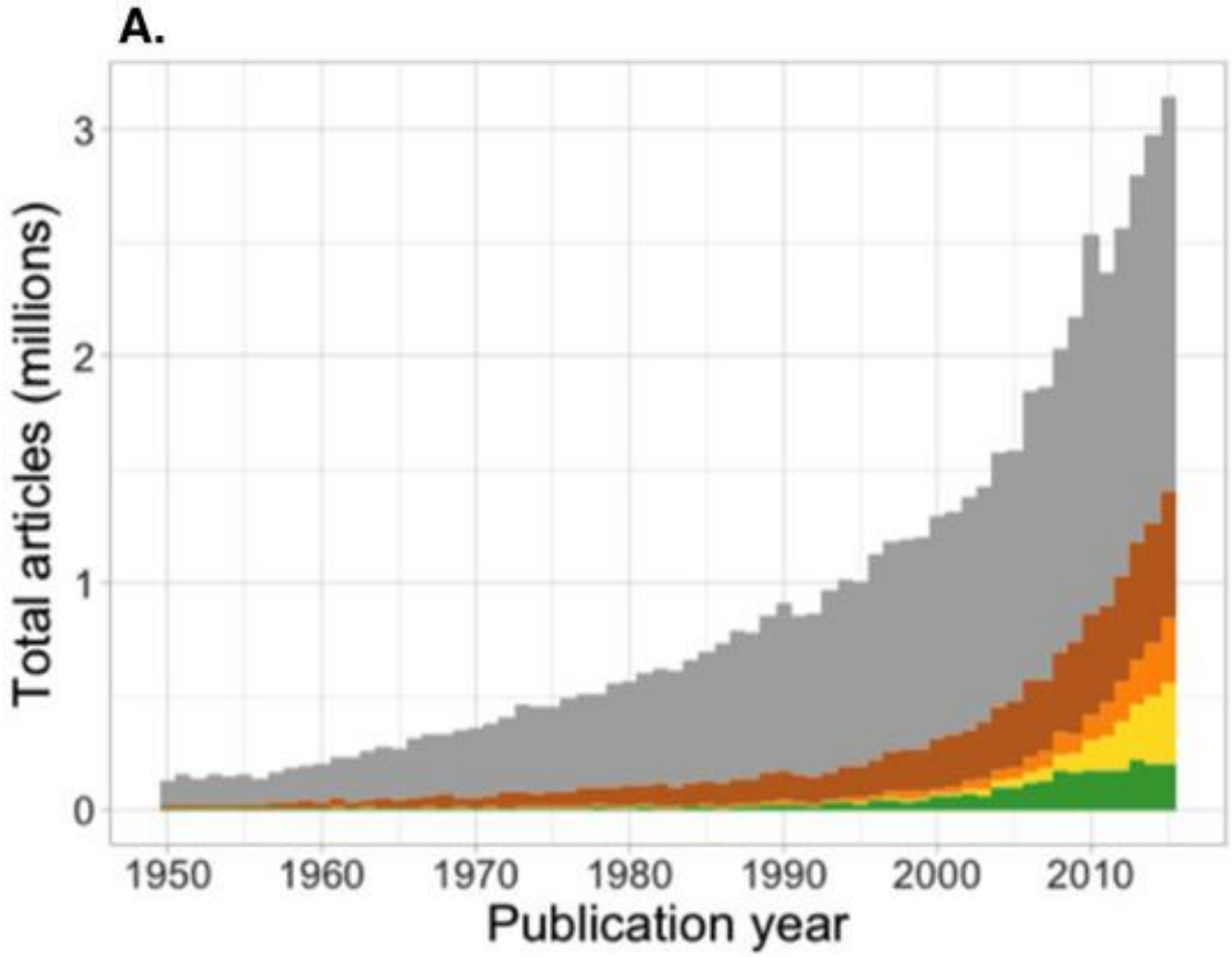


STATE OF OPEN ACCESS



Piwowar et al. 2018.
https://peerj.com/articles/4375

UHI OPEN ACCESS RATE

Source: SciVal

University of the Highlands and Islands

United Kingdom | More details on this Institution

2016 to >2021 | All subject areas

Summary Topics Collaboration Published Viewed

Overall research performance

936

Scholarly Output

64.5% All Open Access

View list of publications

United Kingdom

2016 to >2021 | All subject areas

Summary Topics Collaboration Published

Overall research performance

1,417,669

Scholarly Output

64.2% All Open Access

View list of publications

HAVE YOU PUBLISHED?

slido

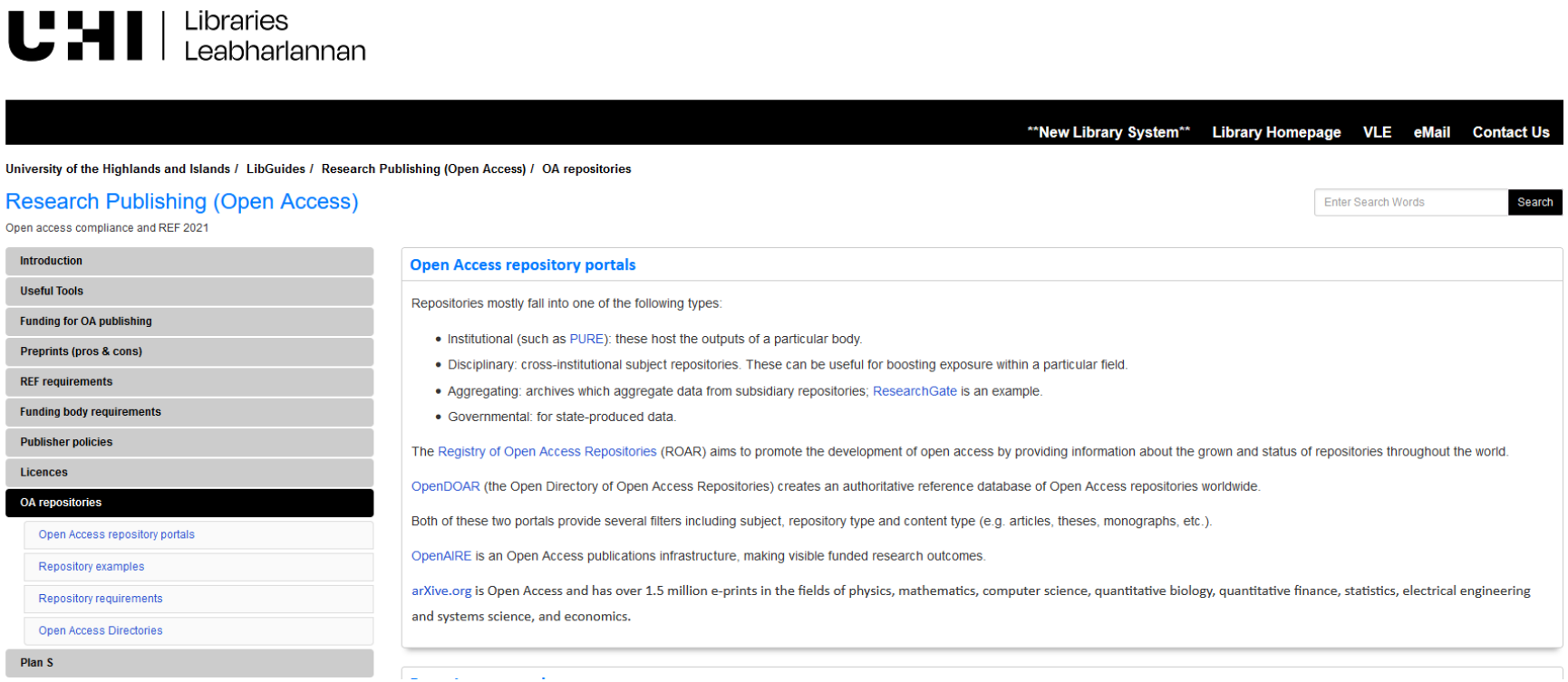
Have you published?

ⓘ Start presenting to display the poll results on this slide.

WHY SHOULD I PUBLISH OPEN ACCESS?

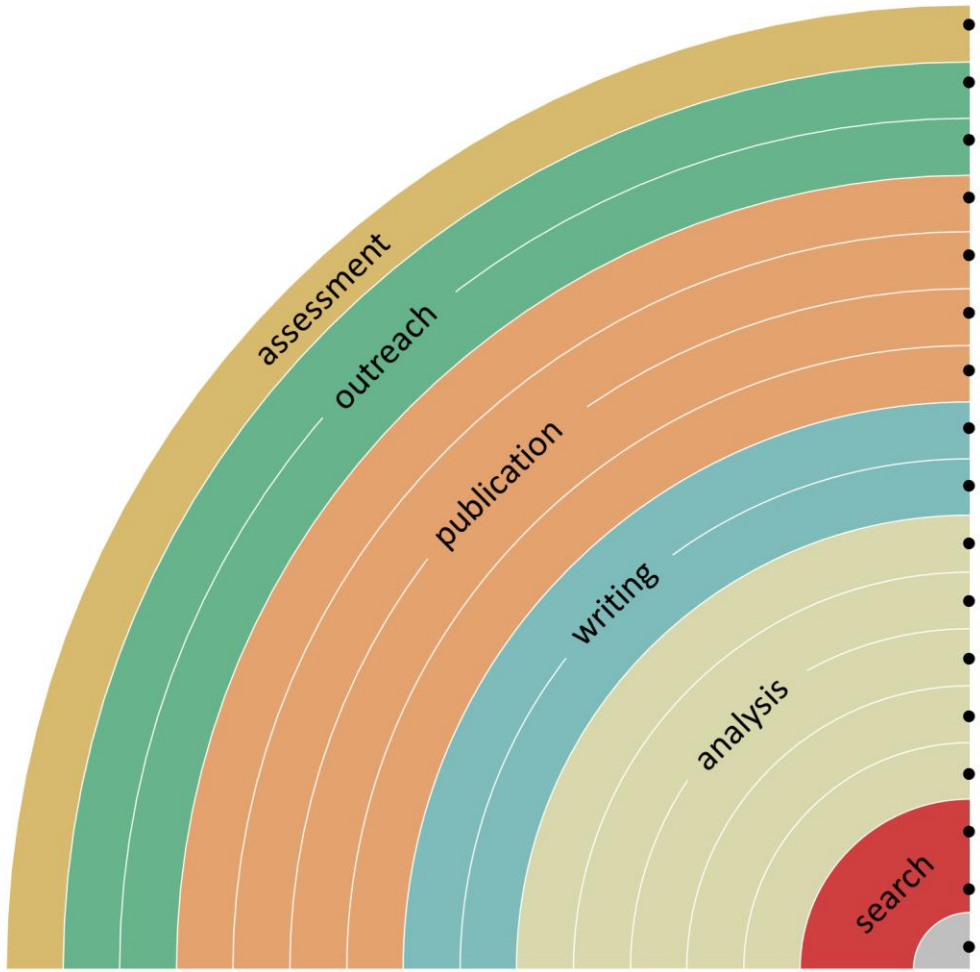
- Good for you!
  - Improves rigour and credibility of your research (especially if research data is available)
  - Higher visibility and citation advantage of 18% (source)
  - Widens opportunities for funding and international collaboration
  - Complies with institutional and funder mandates
- Good for society
  - Everyone can read your research: Public disclosure and engagement
  - Increases trust in research and science
  - Economic benefits: Innovation and knowledge transfer

YOUR LIBRARY WILL HELP YOU WITH OPEN ACCESS PUBLISHING



HOW CAN I BE MORE OPEN - NOW?

You can make your workflow more open by …



- adding alternative evaluation, e.g. with altmetrics
- communicating through social media, e.g. Twitter
- sharing posters & presentations, e.g. at FigShare
- using open licenses, e.g. CC0 or CC-BY
- publishing open access, ‘green’ or ‘gold’
- using open peer review, e.g. at journals or PubPeer
- sharing preprints, e.g. at OSF, arXiv or bioRxiv
- using actionable formats, e.g. with Jupyter or CoCalc
- open XML-drafting, e.g. at Overleaf or Authorea
- sharing protocols & workfl., e.g. at Protocols.io
- sharing notebooks, e.g. at OpenNotebookScience
- sharing code, e.g. at GitHub with GNU/MIT license
- sharing data, e.g. at Dryad, Zenodo or Dataverse
- pre-registering, e.g. at OSF or AsPredicted
- commenting openly, e.g. with Hypothes.is
- using shared reference libraries, e.g. with Zotero
- sharing (grant) proposals, e.g. at RIO

Bianca Kramer & Jeroen Bosman https://101innovations.wordpress.com

DOI: 10.5281/zenodo.1147025

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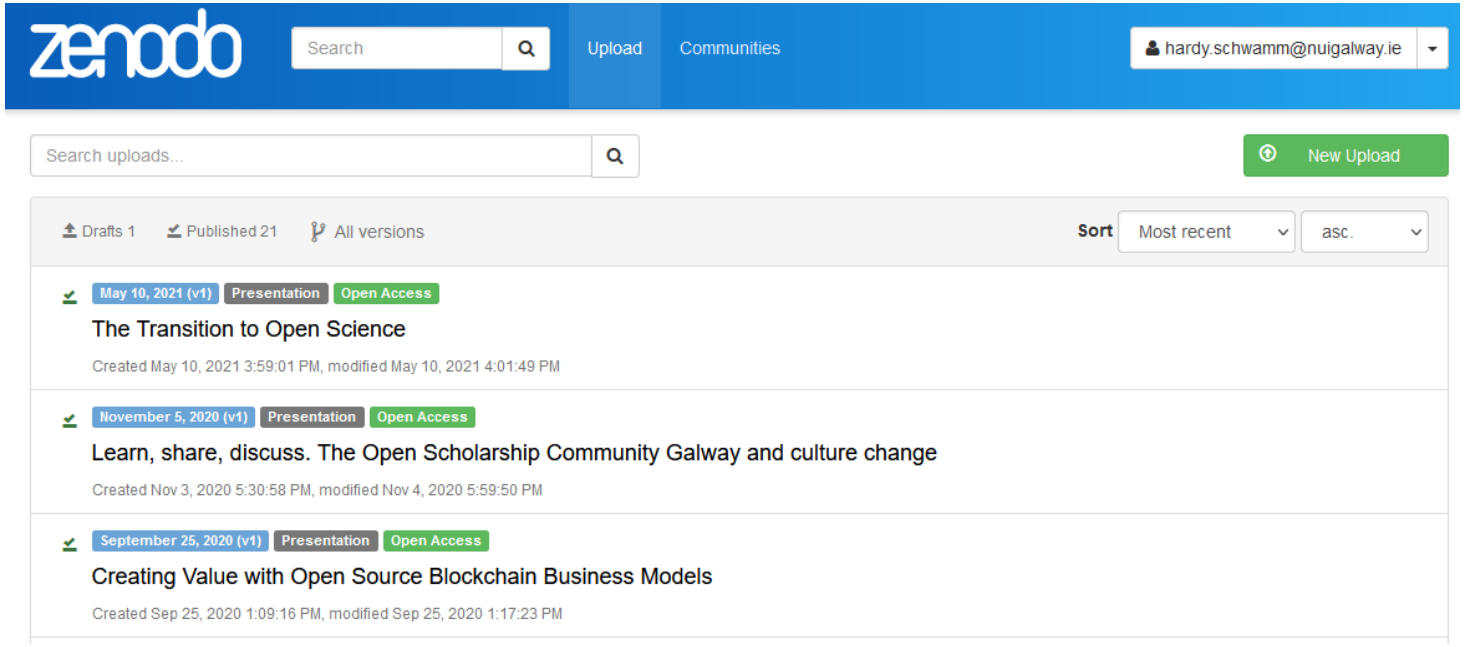
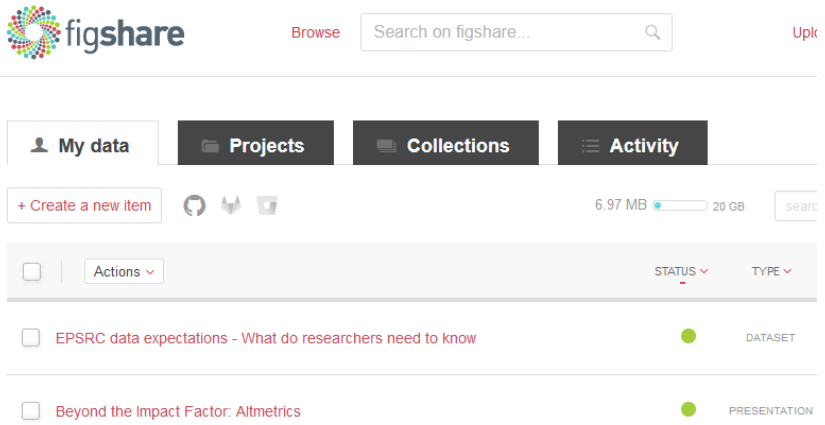




FINALLY: THREE THINGS FOR YOU TO TAKE AWAY FROM TODAY

Adopted from: Daniel Quintana, 2020, https://www.youtube.com/watch?v=0uCG3Fl6ugE

Academic job offers that mentioned open science

OS_job_offers.gsheet

OS_job_offers

Show rows with cells including:

COUNTRY	YEAR	CITY	POSITION	TOPIC	LANGUAGE	RATER 1	MOMS Rat...	MOMS Quote	MOMS co...
Austria	2019	Wien	PhD student	Psychologic...	German		1	Interesse a...	"Interest in.....
Austria	2020	Wien	Project Staff	Developmen...	German		3	Erwartet w...	"Erwartet" =...
Canada	2018	Toronto	Assistant Pr...	Social Psyc...	English	Franka	3	Our depart...	
Canada	2018	Vancouver	Assistant Pr...	Clinical Psy...	English	Franka	2	We encoura...	
Germany	2017	Göttingen	Professor	Clinical Psy...	German	Franka	3	Das Institut I...	
Germany	2017	Köln	Professor	Social Psyc...	English	Franka	3	The Depart...	
Germany	2017	München	Professor	Social Psyc...	German	Franka	3	Das Depart...	
Germany	2017	Münster	Professor	Educational ...	German	Franka	3	Das Fach P...	
Germany	2017	Trier	PhD student	Archiving	English	Franka	1	Current as ...	no explicitly ...
Germany	2017	Trier	PhD student	Publishing	English	Franka	1	Current as ...	no explicitly ...
Germany	2017	Trier	Team Leader	Information ...	English	Franka	1	Current as ...	no explicitly ...
Germany	2017	Trier	Team Leader	Study planni...	English	Franka	1	Current as ...	no explicitly ...
Germany	2017	Trier	PhD student	StudyDesig...	English	Franka	1	Current as ...	no explicitly ...
Germany	2018	Berlin	Professor	Twitter	English	Franka	3	The Charite ...	
Germany	2018	Bochum	Postgraduat...	Human Tech...	German	Franka	2	Die Arbeitsg...	Bewerbung...
Germany	2018	Dresden	Postdoc	Diagnostic I...	German	Franka	1	Wir legen W...	? kein expliz...
Germany	2018	Hamburg	Professor	General Psy...	German	Franka	3	Die Fakultät ...	

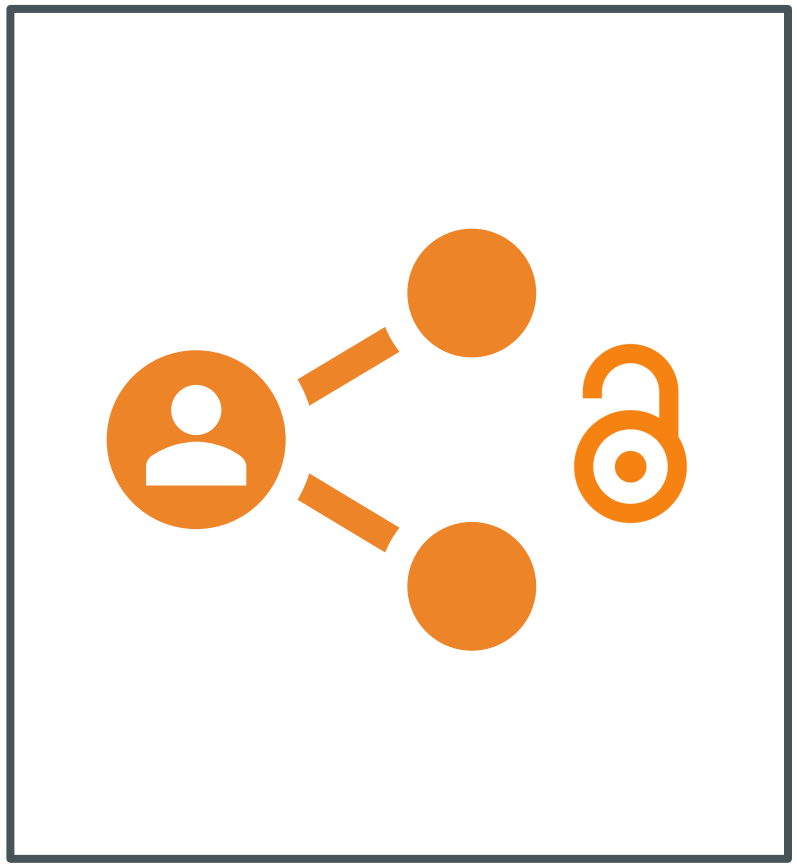
https://osf.io/4xnc7

1. ADOPTING THESE PRACTICES WILL MAKE YOU A MORE COMPETITIVE JOB CANDIDATE

-

An increasing number of jobs indicate that open science practice is an advantage

2. OPEN SCIENCE - YOU CAN START SMALL



- Pick one practice or one tool and have a go
- Start sharing outputs you are comfortable with: a presentation, a well curated dataset, a lesson plan
- Re-mix an Open Educational Resource, use Open Source software, add to Wikipedia

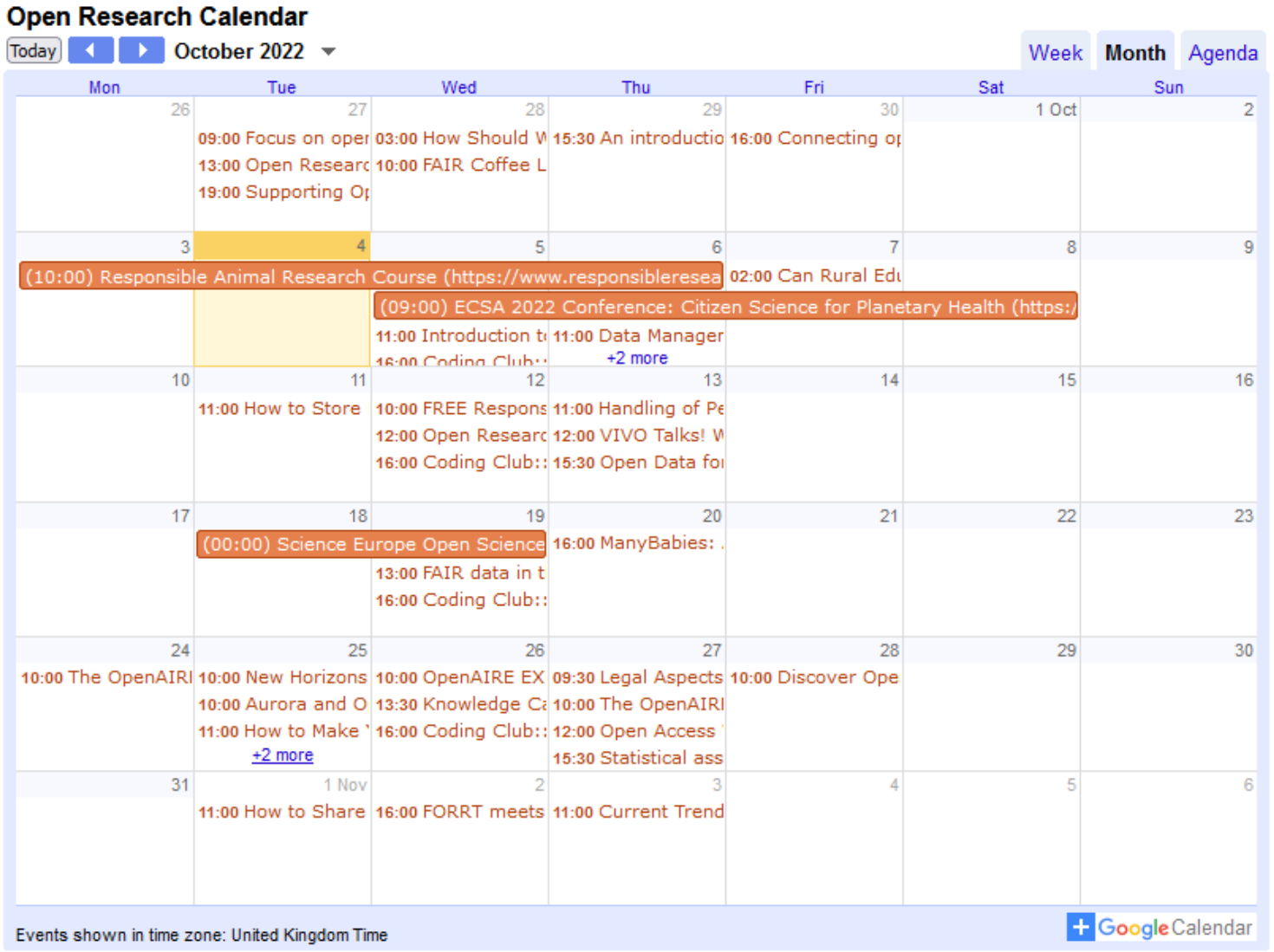
3. YOU WILL SAVE TIME DOING OPEN SCIENCE

You will save time by publish your outputs Openly:

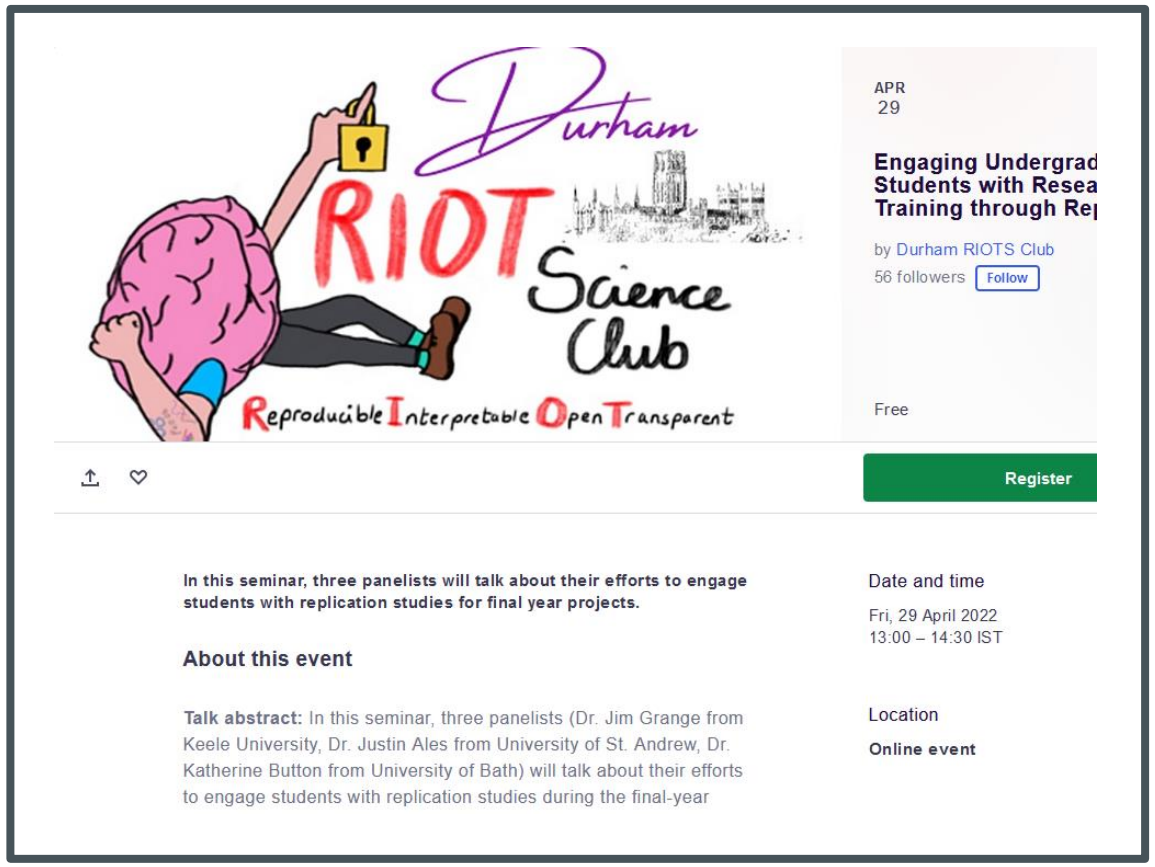
- You will always find your outputs
- You are forced to curate material well
- You will find collaborators

LEARN MORE ABOUT OPEN SCHOLARSHIP

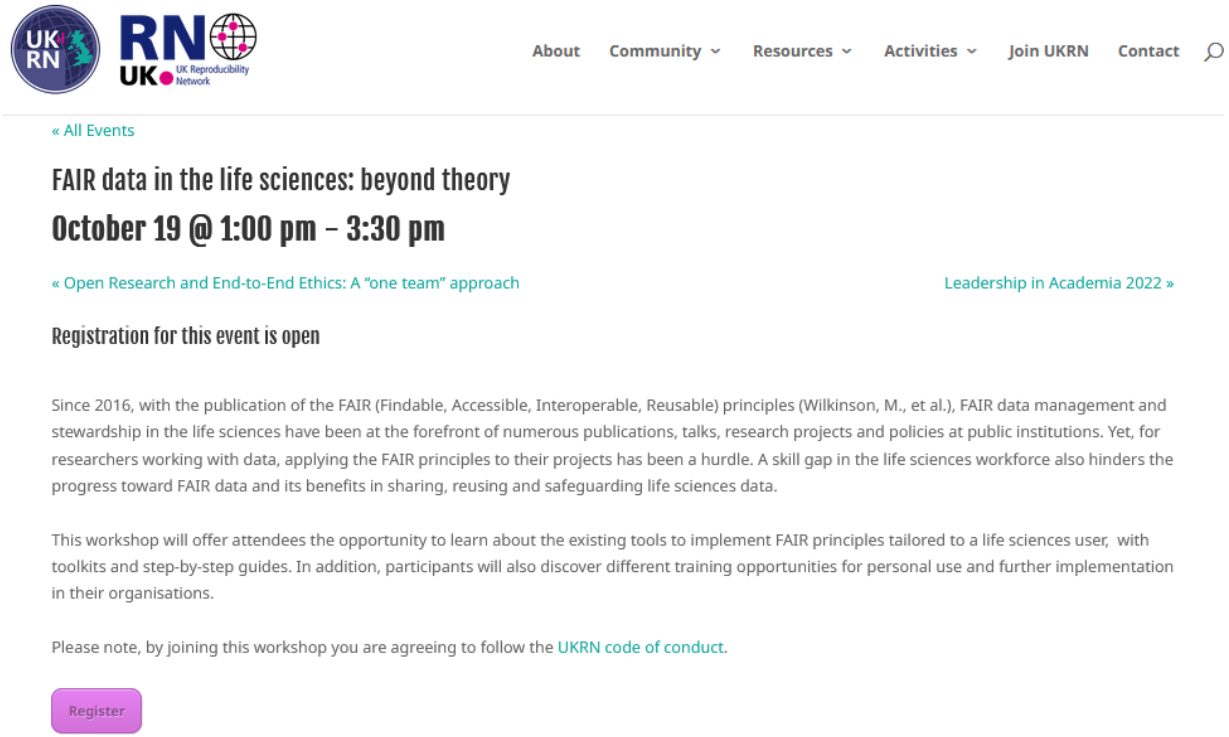
https://openresearchcalendar.org/



OPEN EVENTS FOR EVERYONE



Durham RIOT Club



UKRN events

OPEN SCHOLARSHIP SUMMARY

- Open Scholarship is a facet of big changes in how we do and value research and teaching
- Open Scholarship enables people to better demonstrate their contributions to research, education, and wider society.
- Open Scholarship is good for science, good for your skills developments and career
- Open Scholarship is the future! Be prepared.
- Open Scholarship is all about collaboration and engagement. It's fun!

COMMENT | OPEN ACCESS

When will ‘open science’ become simply ‘science’?

Mick Watson

Genome Biology 2015 **16**:101 | https://doi.org/10.1186/s13059-015-0669-2

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SCIENCE EUROPE

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ABOUT US OUR PRIORITIES WHAT'S GOING ON OUR RESOURCES

Science Europe Open Science Conference 2022

Open Science

THE PROGRAMME

REGISTER

before 18-10-2022 9:00

Science Europe is organising a conference on Open Science on **18 and 19 October 2022**. The goal is to bring together institutional leaders, researchers at all stages of their careers, and experts from the field to discuss two main questions:

- Is Open Science ready to become the norm in research?
- How do we ensure an equitable transition to Open Science?

https://www.scienceeurope.org/events/open-science-conference-2022/

RESOURCES

- UKRI Open Research: https://www.ukri.org/what-we-offer/supporting-healthy-research-and-innovation-culture/open-research/
- Open Scholarship Community Galway: https://osc-galway.ie/
- SPARC Open Education: https://sparcopen.org/open-education/
- Email Hardy: hardy.schwamm@nuigalway.ie