Open Access and Open Science in the Global South

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Jawaharlal Nehru University,
New Delhi, India

Content of the Presentation

- Open Access definitions
- Open Access initiatives in developing countries
- Open Access initiative in India

Definitions

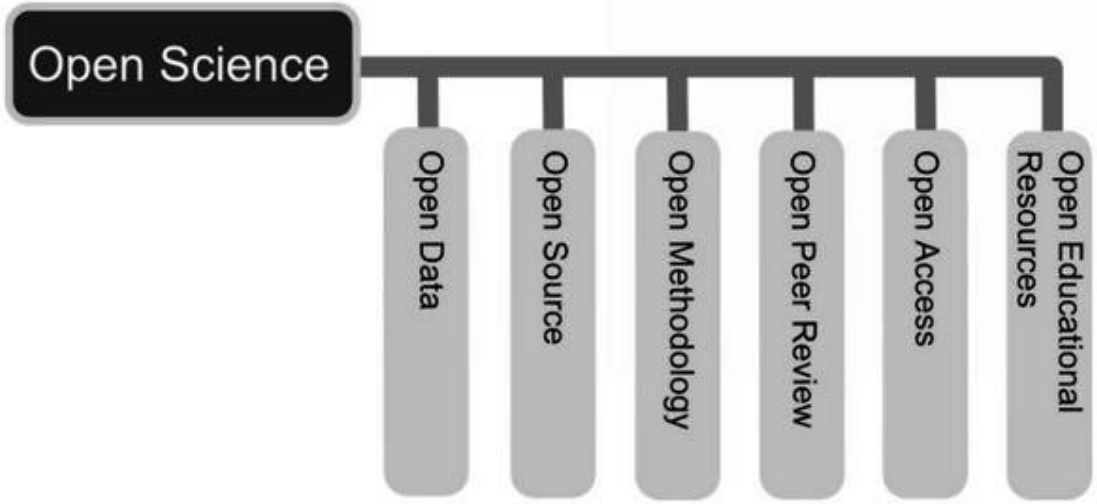
- Open Access (OA) refers to free, unrestricted online access to research outputs such as journal articles and books. OA content is open to all, with no access fees. There are two main routes to making research outputs openly accessible.
- Green Open Access is where an author publishes their article in any journal and then self-archives a copy in a freely accessible institutional or specialist online archive known as a repository, or on a website. Also refers to the self-archiving of an article in a non-commercial subject repository or non-commercial institutional repository (usually after an embargo period).
- Gold Open Access is where an author publishes their article in an online open access journal.
- Platinum Open Access means permanent and free access to published scientific works for readers with no publication fees for the authors – 100% free. Authors are not charged article processing fees or publication fees – no fees whatsoever.

Definitions

- Open Access Publishing: While OA is a newer form of scholarly publishing, many OA journals comply with well-established peer-review processes and maintain high publishing standards.
- Self-archiving is the act of depositing a free copy of an electronic document online in order to provide open access to it.
- Open Science represents a new approach to the scientific process based on cooperative work and new ways of diffusing knowledge by using digital technologies and new collaborative tools (European Commission, 2016)
- "to make the primary outputs of publicly funded research results – publications and the research data – publicly accessible in digital format with no or minimal restriction" (OECD, 2015:7)
- Open Science is about extending the principles of openness to the whole research cycle, fostering sharing and collaboration as early as possible thus entailing a systemic change to the way science and research is done.

(Source: www.fosteropenscience.eu/content/what-open-science-introduction)

“Open Science represents an approach to research that is collaborative, transparent, and accessible. A wide range of activities comes under the umbrella of Open Science including Open Access publishing, Open Data,Open Notebook, Open Peer Review, and Open Education.”



https://commons.wikimedia.org/wiki/File:Open_Science_-_Prinzipien.png

Open Science

- Open Science is the movement to make scientific research and data accessible to all.
- It includes practices such as:
  - Publishing Open Scientific Research,
  - Campaigning for Open Access & generally making it easier to publish, and
  - Communicate Scientific Knowledge.
  - Other ways to make science more transparent and accessible during the research process. This includes
    - Open Science Notebook,
    - Citizen Science,
    - Aspects of Open Source Software,
    - Crowdfunded Research Projects.

Source: Global Open Access Portal, UNESCO

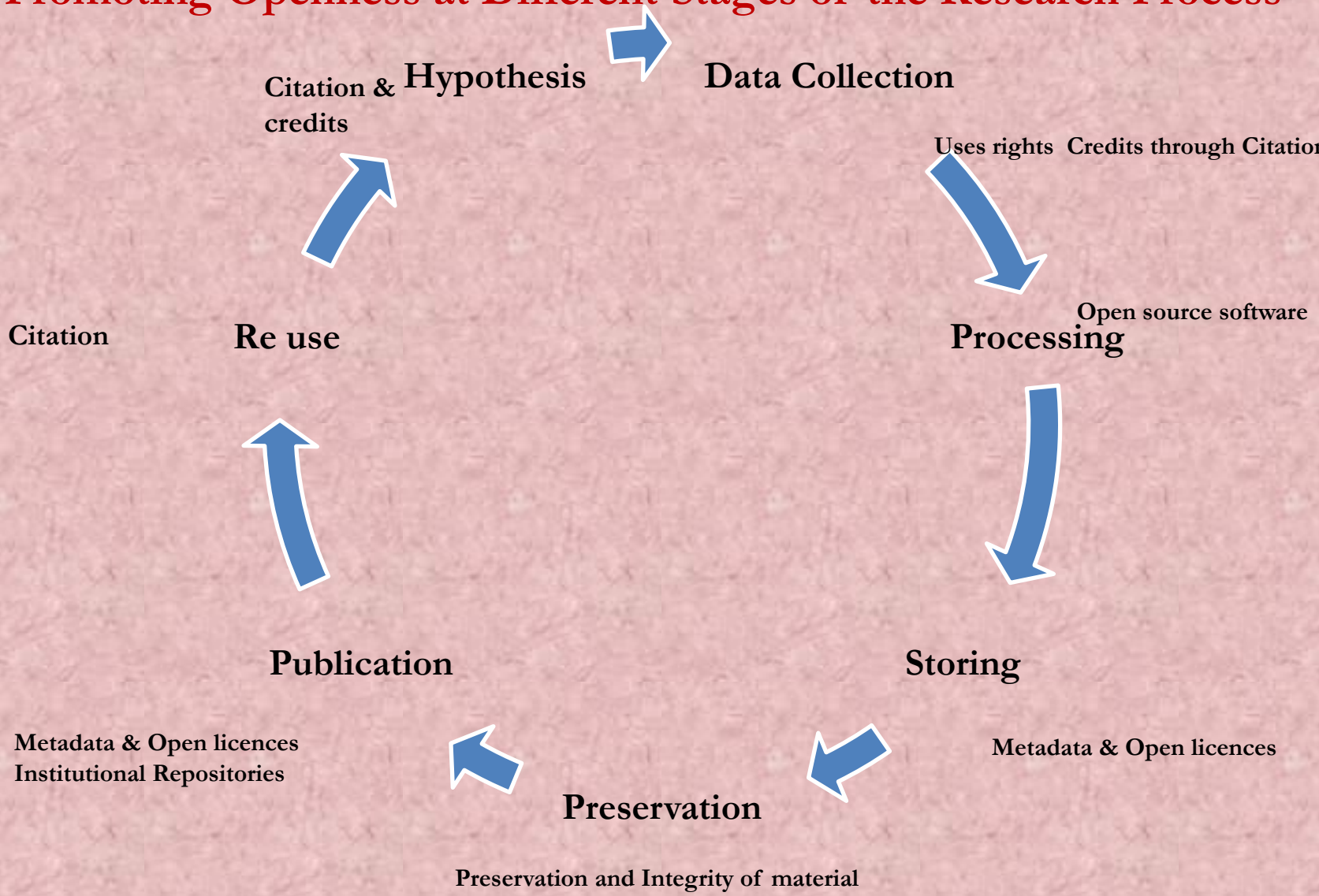
Open Science: Importance

- To overcome the knowledge divides, we need more cooperation across disciplines and across borders to help governments develop more effective and inclusive policies, North and South. International networks, open data sources, co-creation of knowledge, open access to publishing and software – these are all vital to achieving this.

Irina Bokova | Director-General of UNESCO

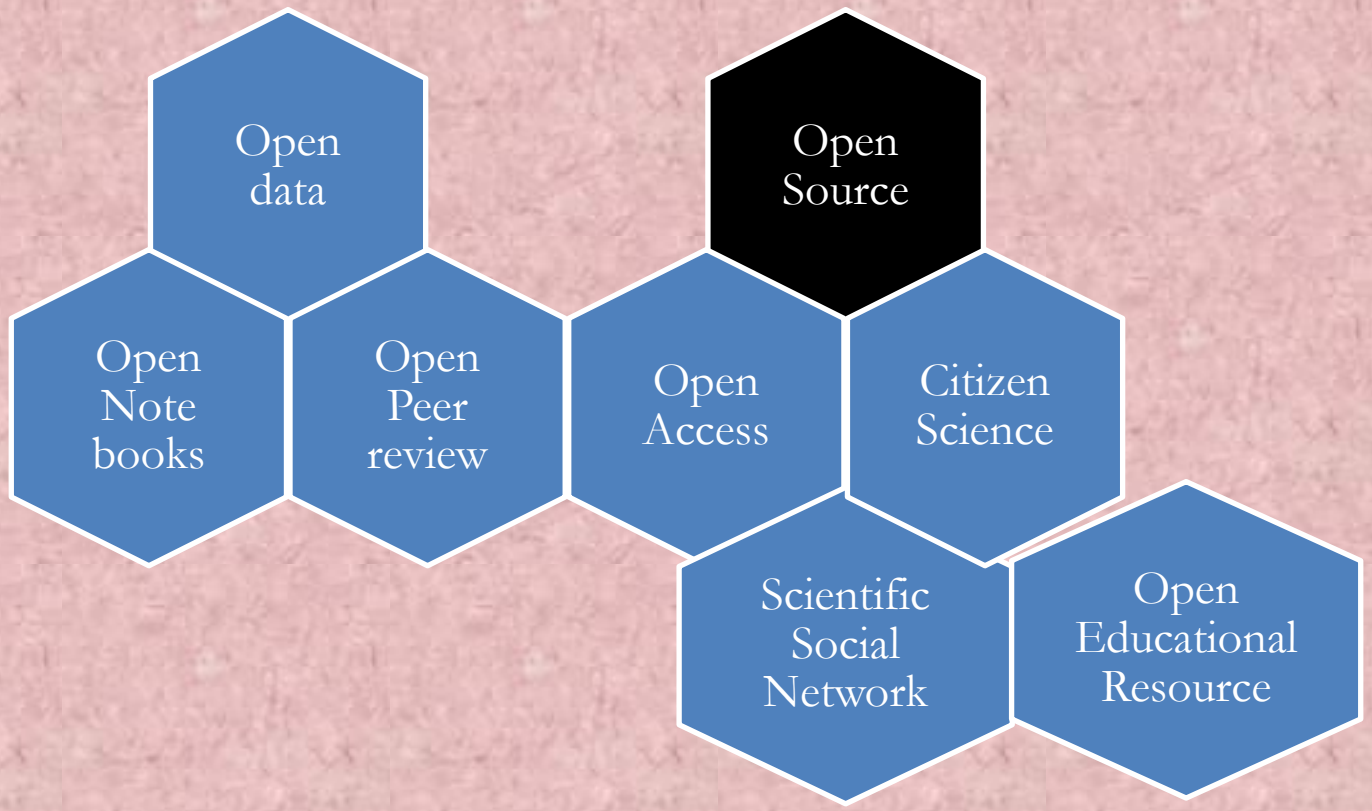
World Social Science Report 2016: Challenging Inequalities: Pathways to a Just World

Promoting Openness at Different Stages of the Research Process

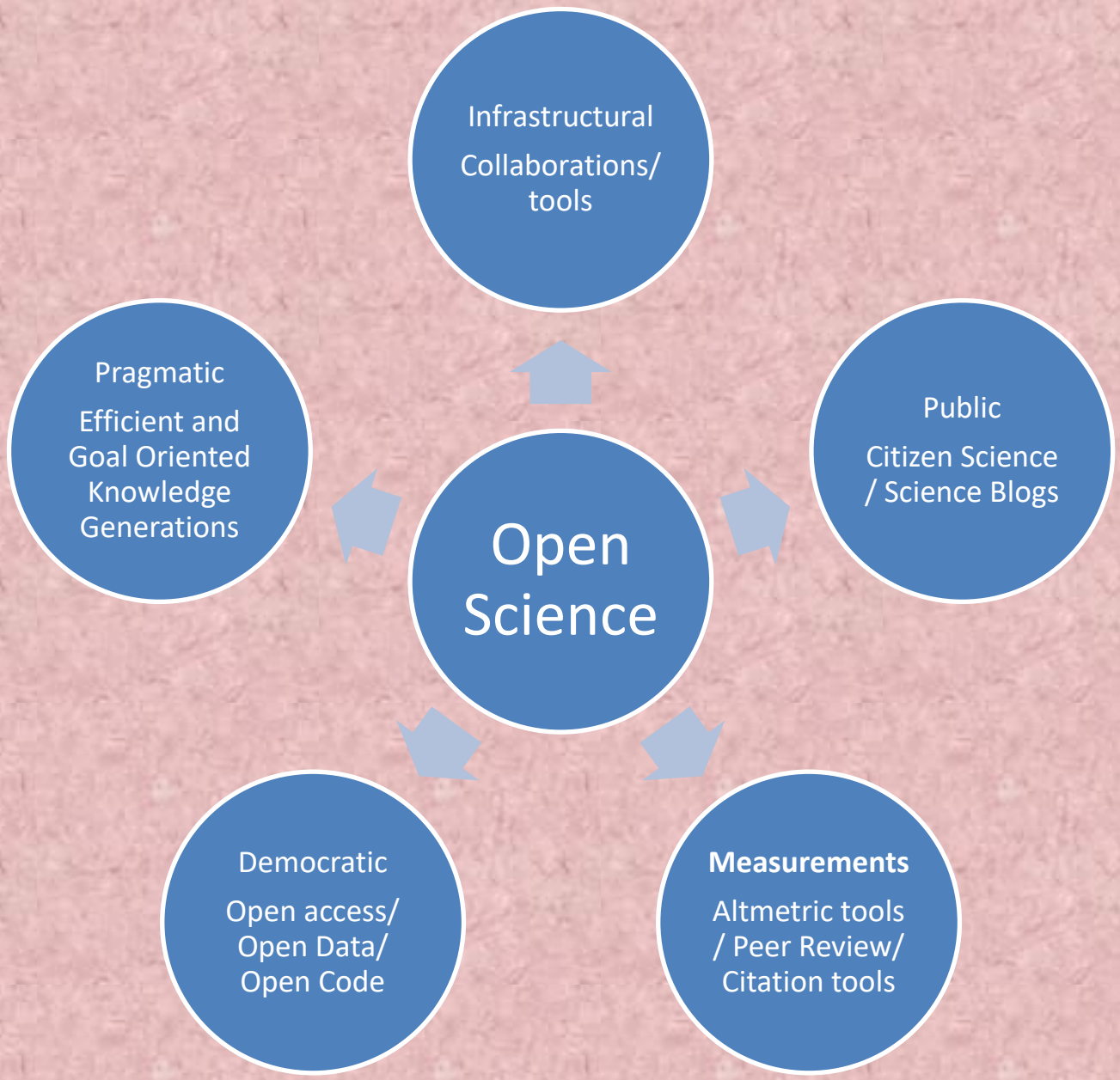


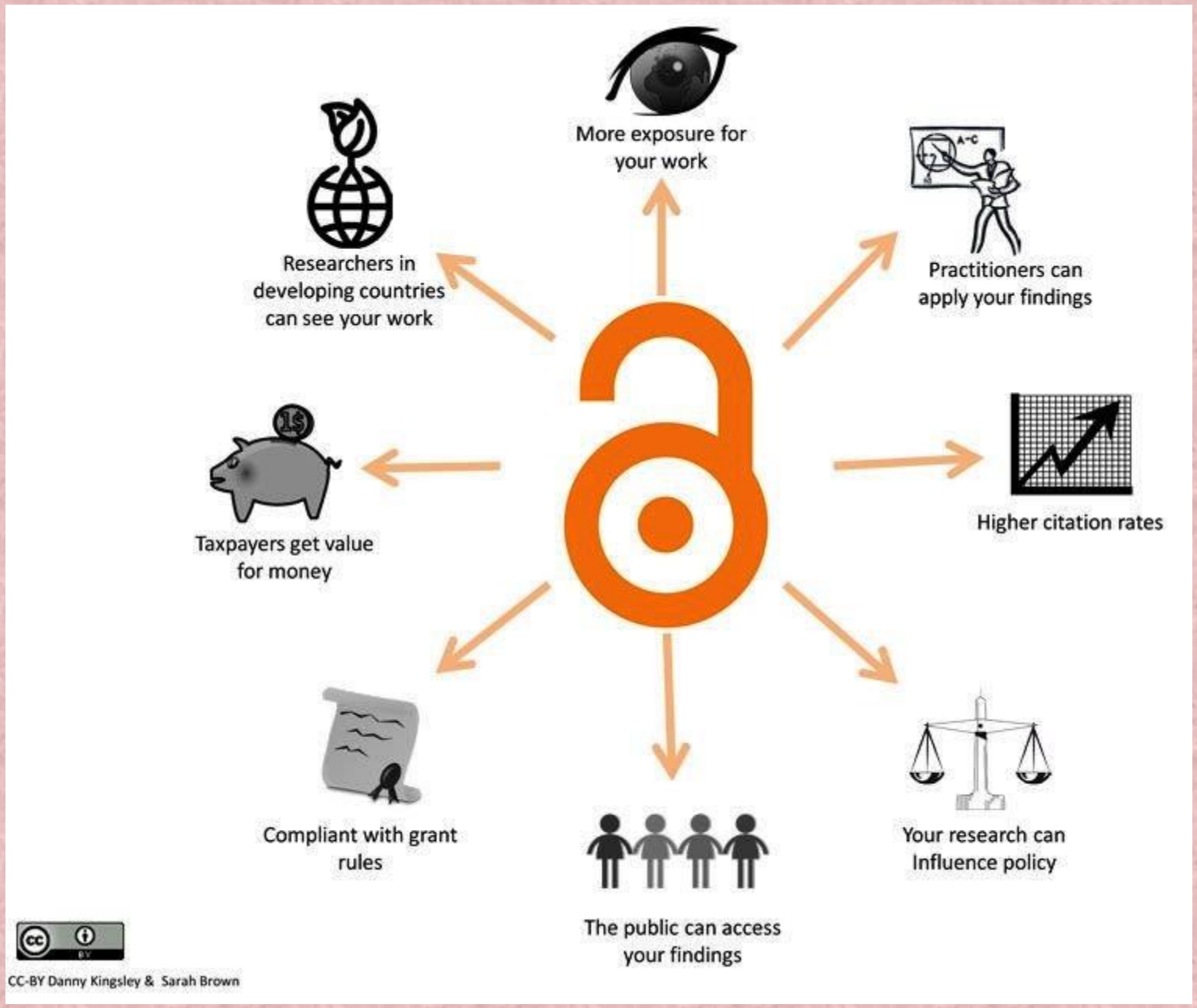
Source : https://www.fosteropenscience.eu/node/1431#osri2014

Open Science Facets

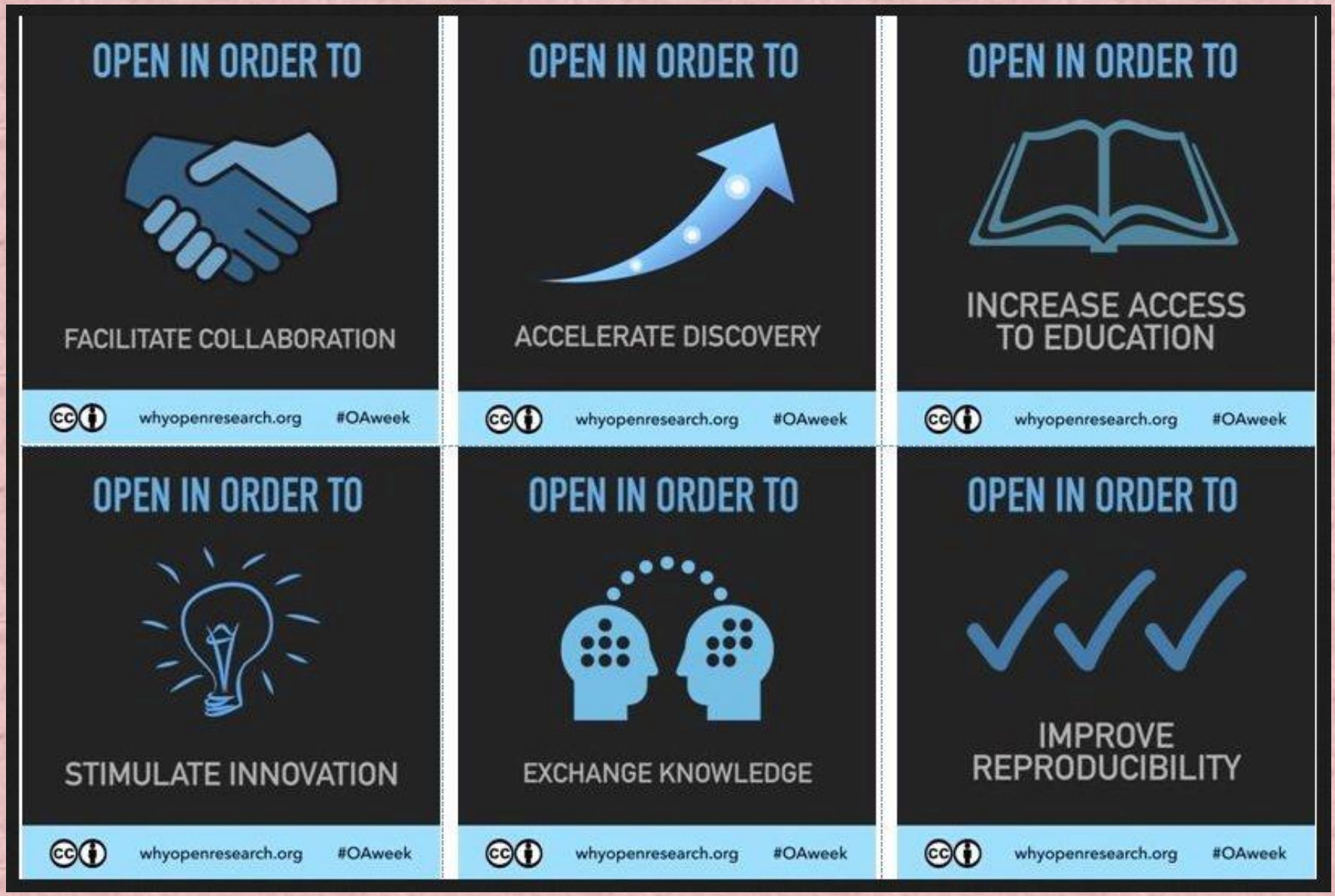


Open Science School of Thoughts




More exposure for your work
Researchers in developing countries can see your work
Practitioners can apply your findings
Taxpayers get value for money
Higher citation rates
Compliant with grant rules
The public can access your findings
Your research can Influence policy
CC-BY Danny Kingsley & Sarah Brown

Why


OPEN IN ORDER TO
FACILITATE COLLABORATION
whyopenresearch.org #OAweek
OPEN IN ORDER TO
ACCELERATE DISCOVERY
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IMPROVE REPRODUCIBILITY
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WHY OPEN ACCESS TO SCIENTIFIC PEER-REVIEWED PUBLICATIONS?

GOOD FOR SCIENCE

allows scientists to build on previous research results and avoids unnecessary duplication of effort

improved quality and greater efficiency

GOOD FOR THE ECONOMY

speeds up innovation

faster progress to market

GOOD FOR SOCIETY

makes research available to individual citizens and to non-profit organisations

greater transparency

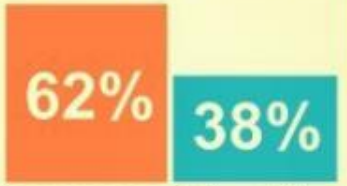
OPEN ACCESS: BENEFITS

Unique visitors

Increased Visibility

Increased Citation Rates

Citation Rates



"Jack Andraka, a 15 year old from USA, used free articles from Google Scholar to develop a highly innovative method of detecting a rare type of pancreatic cancer."

Drives Innovation

Global Impact

"Piya Sorcar, founder of Teach Aids made materials & research about HIV available for free globally. The material is now available in 15 languages and has reached over 70 countries, including numerous educators, governments and NGOs."

Open Access brings new audiences to scholarly content, such as educators, business owners, support workers and so on by removing barriers of affordability and access.

Public Access

Comply with Funder Policies

Funders, such as the Research Councils, European Commission and the Wellcome Trust, mandate for open access publication of research outputs.

Visibility
wider dissemination of research undertaken in Austria

Media
higher quality of information services

Democratisation
access independent of income

Public
transparent spending of tax money

Knowledge Transfer
diffusion of knowledge into all societal areas

Publisher
market entrance for providers from Austria

Education
teaching and learning according to the scientific state of the art

Developing Countries
self-help based on current scientific knowledge

Citizen Science
participation of citizens in the research process

Reproducibility
simplifying the verification of research results

Politics
making better decisions based on current scientific knowledge

Knowledge Networks
new potentials via data and text mining

Health
up-to-date information for doctors and patients

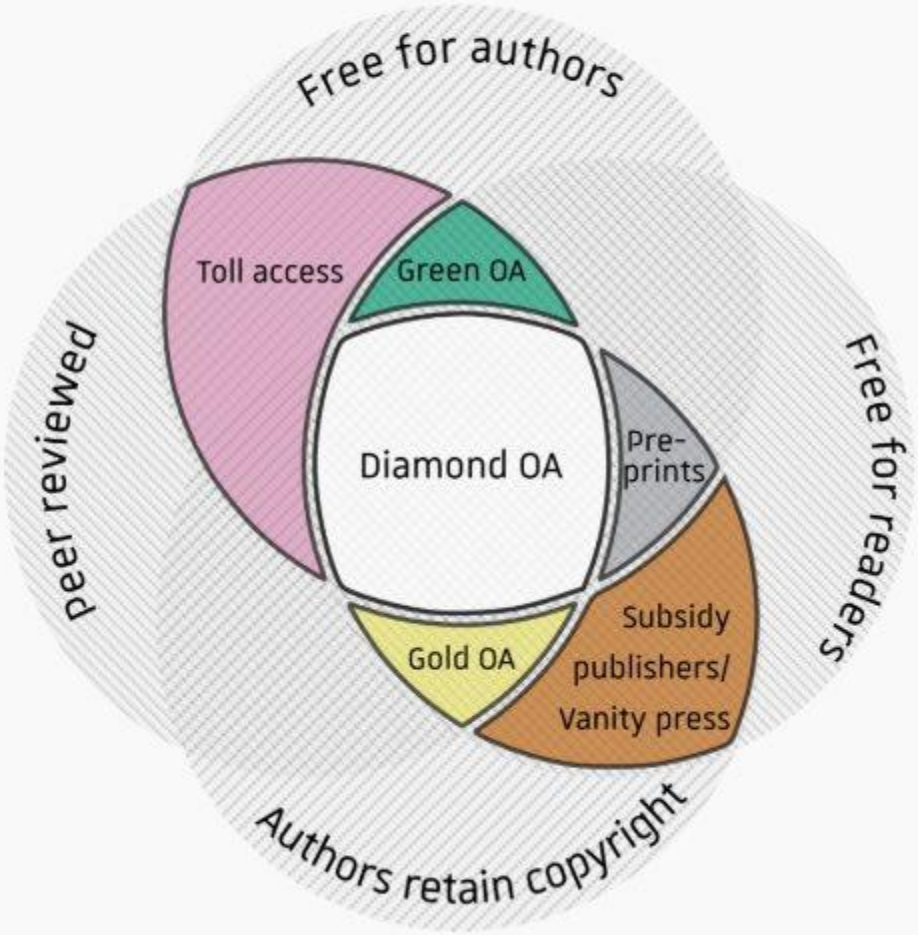
Interdisciplinarity
enhances exchange between disciplines

Research Efficiency
avoiding duplication and double funding

Open Innovation
access to cutting-edge research encourages innovation

✧ *Where do we fit in?*

The distinction between types of publishing and access can often seem complex. Nevertheless, most of the salient points can be summed up in one simple diagram:



THE IMPACT OF OPEN ACCESS

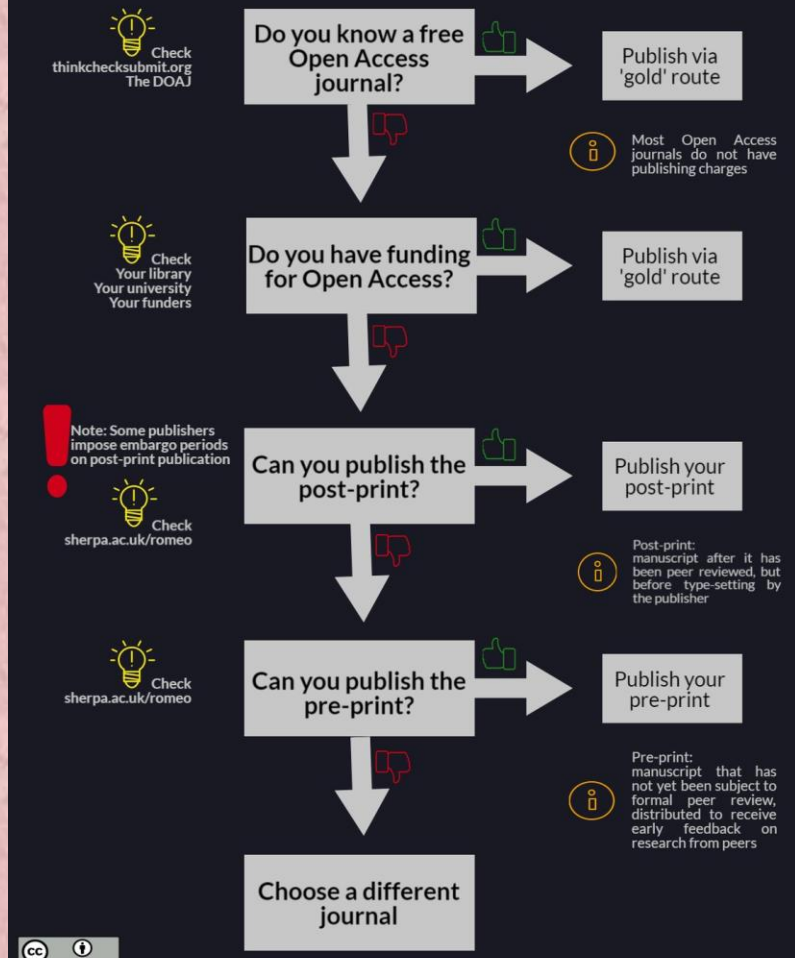
bepress™

Table 2.1: Indicative Open Access Timeline[7]

arXiv.org Repository Launched	1991
PubMed Central Repository Launched	2000
EPrints software Released	
PLOS journals Launched	
BioMed Central journals Launched	
OJS (Open Journal Systems) Software Released	2001
SPARC Launched	2002
DSpace software Released	
Creative Commons Licenses Released	
Budapest OA Initiative (Declaration)	
OAIster Database Launched	
Berlin, Bethesda Declarations	2003
WSIS Action Lines Launched	
DOAJ (Directory of Open Access Journals) Launched	
OpenDOAR (Directory of Open Repositories) Launched	2006
Celebration of **Open Access Week** Started	2007
OA Scholarly Publishers Association (**OASPA**) Launched	2008

HOW TO MAKE YOUR RESEARCH OPEN ACCESS

FOR FREE AND LEGALLY



CC BY

Jon Tennant and Lisa Matthias

HOW TO ACHIEVE OPEN ACCESS IN HORIZON 2020

SELF-ARCHIVING
'GREEN' OPEN ACCESS

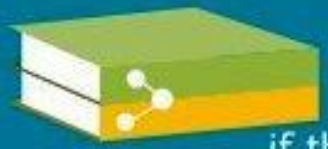
deposit the final peer-reviewed manuscript in a repository of your choice.

Researchers must ensure open access to the publication within at most 6 months (12 months for publications in the social sciences and humanities).

OPEN ACCESS PUBLISHING
'GOLD' OPEN ACCESS

publish in open access journals or in hybrid journals.

Article processing charges are eligible for reimbursement during the duration of your project. Hybrid journals sell subscriptions (i.e. closed access) AND offer the option of making some individual articles open access.



BOTH OPTIONS ARE POSSIBLE

if the gold route is chosen the article must also be deposited in a repository to comply with Article 29.2.

Open Access Publishing

RESEARCHER
decides where to publish

SEE SHERPA RoMEO for
OA & self archiving options
sherpa.ac.uk/romeo

PUBLISH in an **Open access journal**

PAY Article Processing Charge (**APC**)
if required

GOLD OA ROUTE

IMMEDIATE
Open Access via publisher

PUBLISH in a **subscription-based journal**

SEARCH for
OA repository
opendoar.org

GREEN OA ROUTE

SELF ARCHIVE in a repository
based on publisher policy

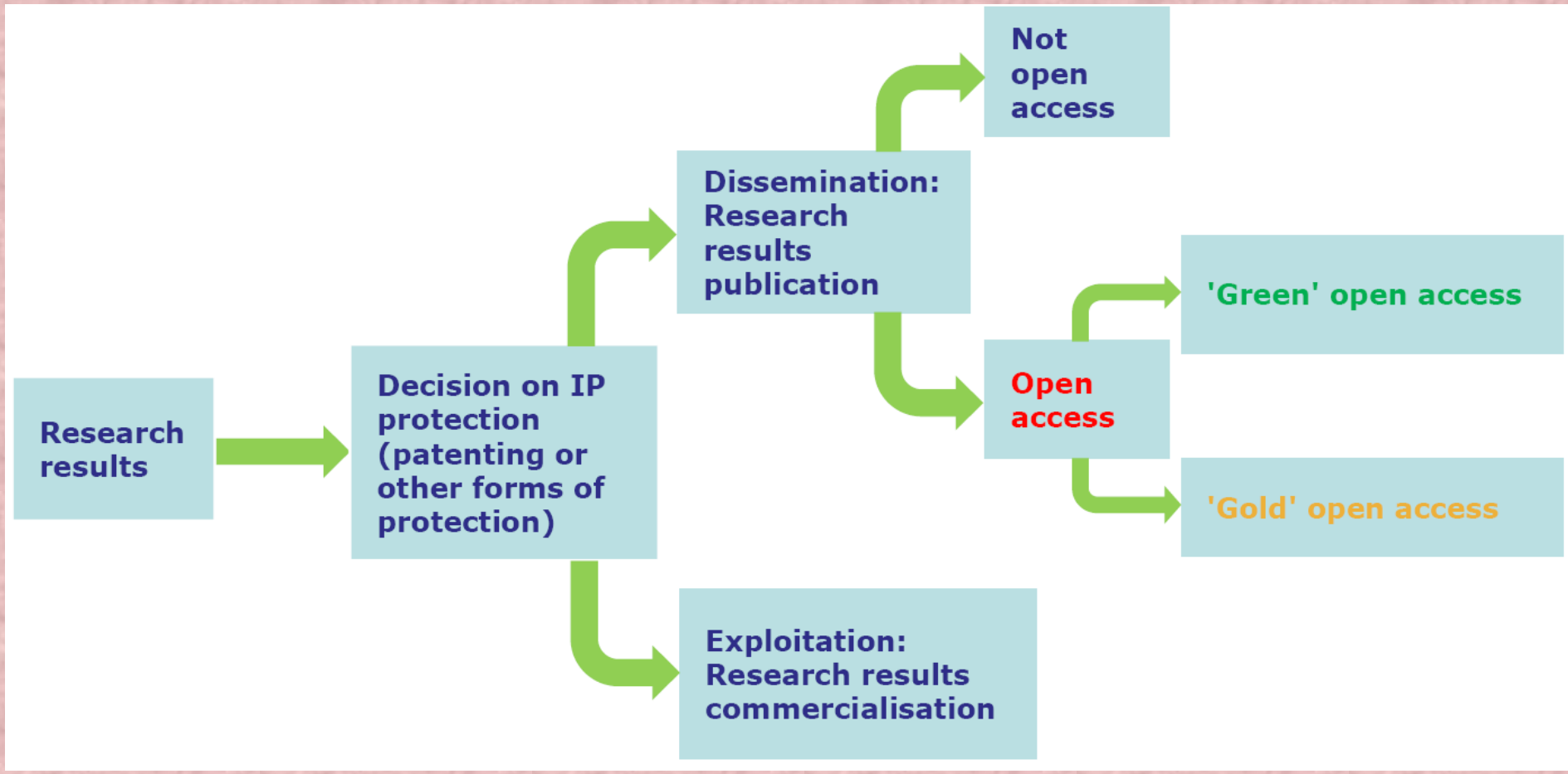
IMMEDIATE or DELAYED
Open Access
(depending on publisher's policy)

HYBRID JOURNAL
subscription-based journal
With a paid open access option

PAY Article Processing Charge (**APC**)
if required

IMMEDIATE
Open Access via publisher

Darren Chase | darren.chase@stonybrook.edu Stony Brook University | Libraries



- Do Open Access models have an impact on intellectual property rights?
- No. **OA** will not affect the IP generated by research results, because the decision on whether to publish **OA** documents comes after the more general decision.

Open Science Movement

- The many advantages of Open Science Movement include:
  - Greater availability and accessibility of publicly funded scientific research outputs;
  - Possibility for rigorous peer-review processes;
  - Greater reproducibility and transparency of scientific works;
  - Greater impact of scientific research.

Source: Global Open Access Portal (GOAP), UNESCO

Celebration of Promotional Weeks for Open Science

- International Open Access Week | 19-25 October 2020 | Everywhere [http://www.openaccessweek.org]

- International Open Education Week | 1-5 March 2021 | Everywhere [https://www.openeducationweek.org]

- International Data Week| 8–11 November 2021 [http://www.internationaldataweek.org]: The theme of IDW 2018 and IDW 2016 were respectively 'Digital Frontiers of Global Science' and 'From Big Data to Open Data: Mobilising the Data Revolution'. IDW 2018 edition was be held at Gaborone, Botswana in African region during 5-8 November.

ROARMAP
Registry of Open Access Repository Mandates and Policies

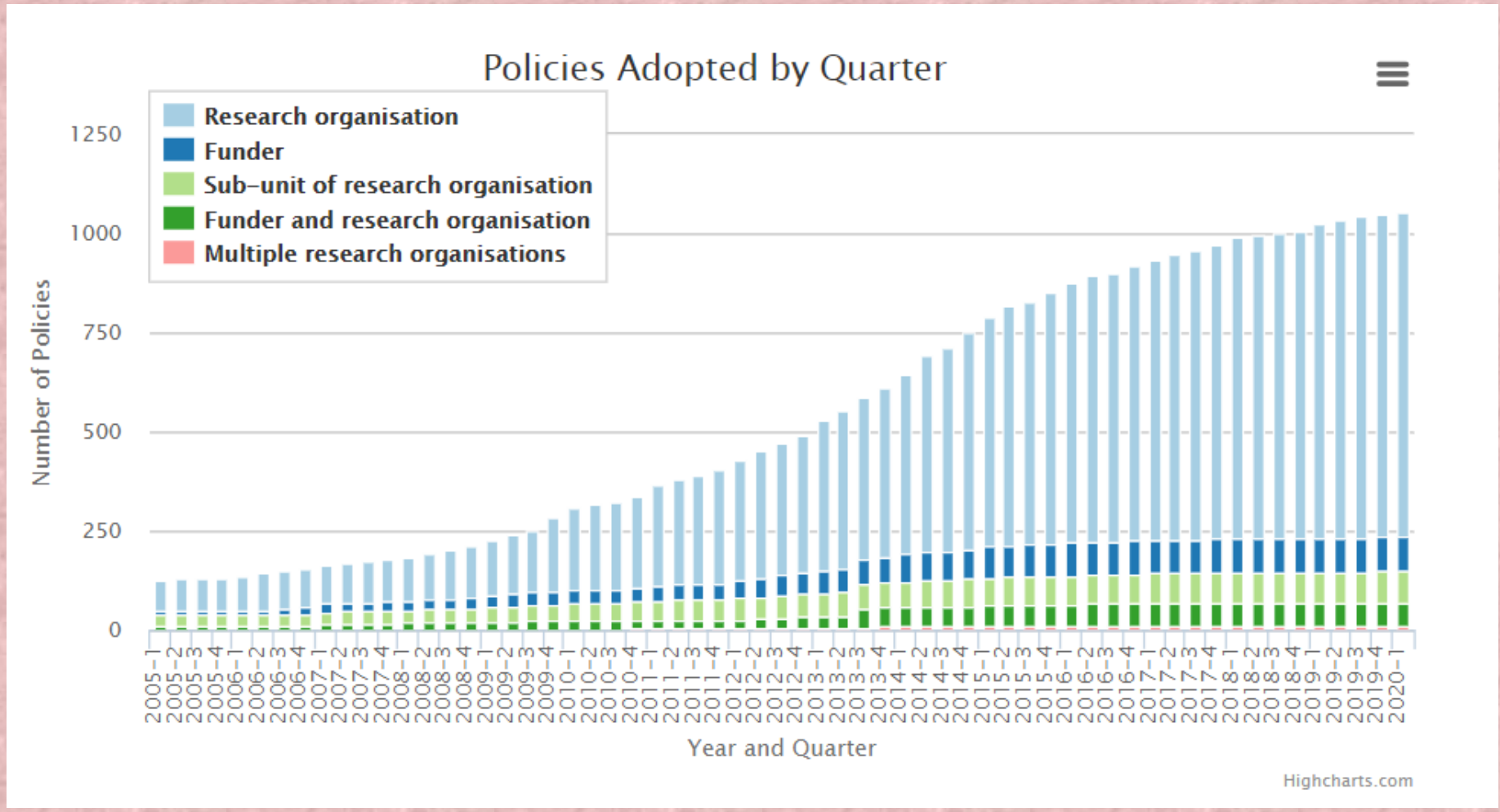
re3data.org
REGISTRY OF RESEARCH DATA REPOSITORIES

OpenDOAR
The Directory of
Open Access Repositories

ROAR- Registry of Open Access
Repositories

DOAJ
DIRECTORY OF
OPEN ACCESS
JOURNALS

Growth of OA Policies Adopted Worldwide, 2005-2020



Source: Registry of Open Access Repository Mandates and Policies (ROARMAP), http://roarmap.eprints.org/

BRICS Nations on ROARMAP

Registry of Open Access Repository Mandates and Policies

Name of the Country	Available Policy Instruments
Brazil	26
Russia	8
India	16
China (including Hong Kong)	8
South Africa	11
Total from BRICS Economies	69 (6.56%)
Global Total	1051

Global Mapping of OA Movements

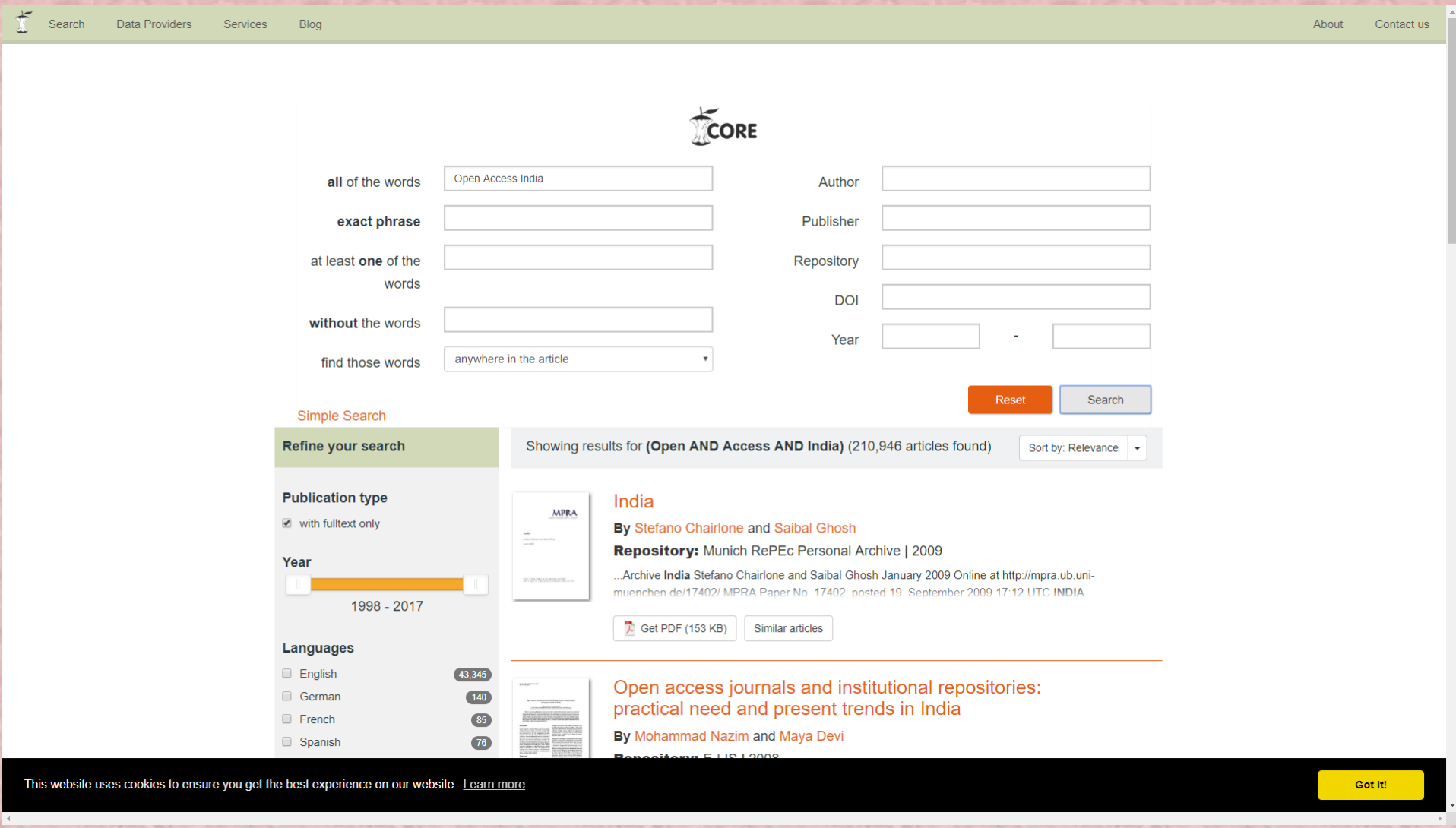
http://www.unesco.org/new/en/communication-and-information/portals-and-platforms/goap/

Open Science Proliferation in BRICS Nations

Open Science Channel/ Country	No. of items in Directory of Open Access Journals (DOAJ)*	No. of items in Directory of Open Access Scholarly Resources (ROAD)#	No. of items in Directory of Open Access Repositories (OpenDOAR)*	No. of items in Registry of Research Data Repositories (RE3Data.org)#
Brazil	1081	1184	97	7
Russia	186	670	28	21
India	198	2175	79	31
China	102	29	40	37
South Africa	63	145	33	6
Total	1630 (15.96%)	4203 (16.78%)	277 (8.03%)	95 (5.0%)
Global Total	10213	25047	3448	2036

 # Data as on 16th March 2018 | * ***Data as on*** 10th October 2017 **.**

http://core.ac.uk: It offers seamless access to millions of open access research papers, enrich the collected data for text-mining and provide unique services to the research community.



http://core.ac.uk/search?q=(Open%20AND%20Access%20AND%20India)

CORE Advanced Search

Data Providers

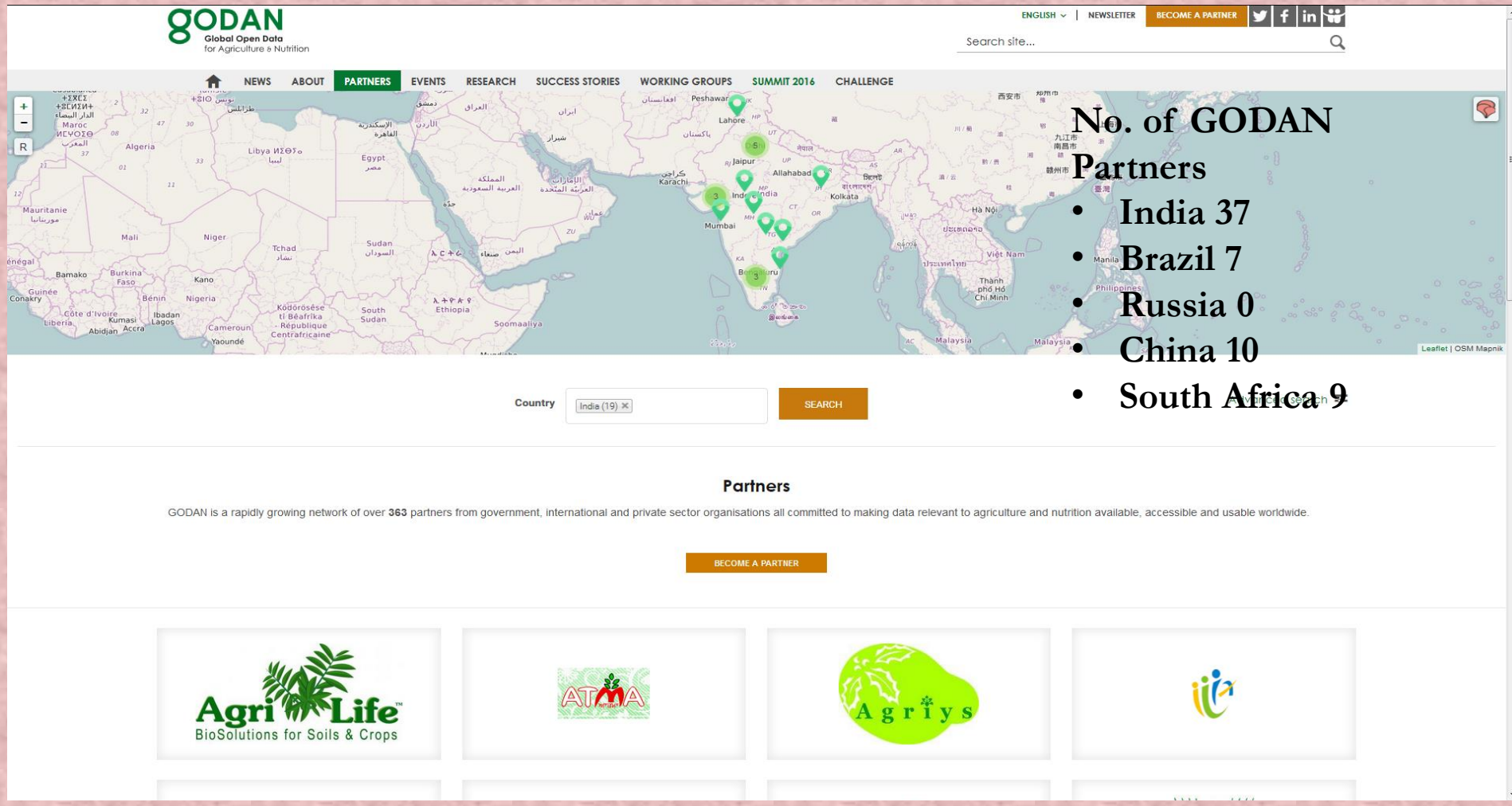
CORE aggregates research papers from data providers from all over the world including institutional repositories, subject-repositories and journal publishers. This process, which is called harvesting, allows us to offer search, text-mining and analytical capabilities over not only metadata, but also the full-text of the research papers making CORE a unique service in the research community.

CORE currently contains 134,356,349 open access articles, from over tens of thousands journals, collected from over 3,698 repositories around the world.

Learn more about becoming a data provider

Open Research Data Repositories

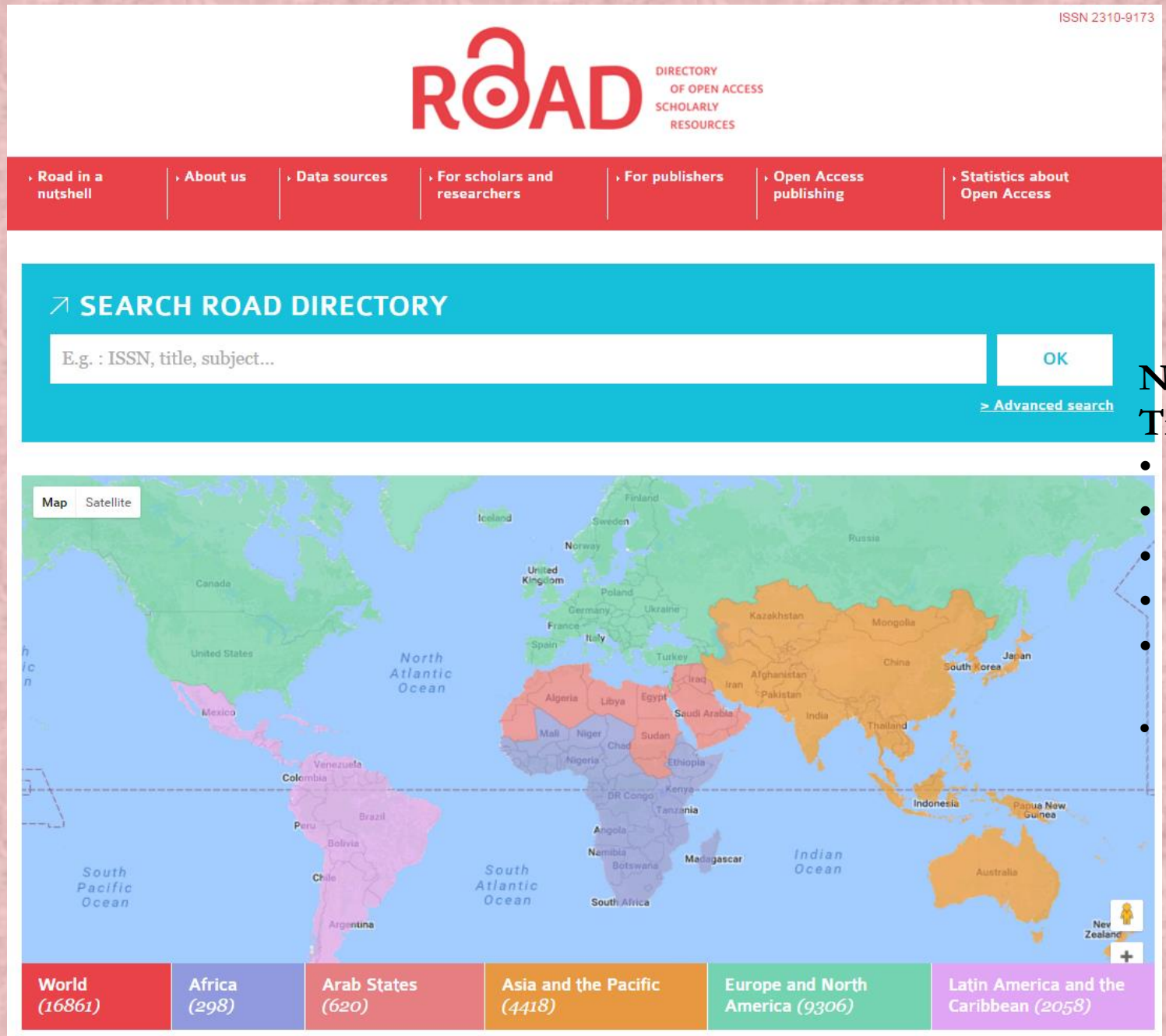
- https://www.re3data.org/browse/by-country/
- Brazil : 9 Open Data Repositories
- Russia : 22 Open Data Repositories
- India: 51 Open Data Repositories
- China : 44 Open Data Repositories
- South Africa: 11 Open Data Repositories



GODAN.info (Global Open Data for Agriculture and Nutrition): Challenging global poverty and promoting food security through opening up data in agriculture and nutrition for everyone. #OpenData #ICT4AG #SDG2

#GODAN is a rapidly growing network of over 656 partners from government, international and private sector organisations all committed to making data relevant to agriculture and nutrition available, accessible and usable worldwide.

Open Access Scholarly Resources



No. of Publication Titles

- **India 2609**
- **Brazil 1306**
- **Russia 800**
- **South Africa 162**
- **China 57**

- As on 16th March 2018

http://ROAD.issn.org

Indian National Initiatives

Open Access India

Indian Civil Society Actor for Open Science Movement

Open Access India

Advocating Open Access, Open Data and Open Education in India

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Home

Welcome to Open Access India!

*The Budapest Open Access Initiative defined "**Open Access**" as making it freely available on the public Internet, permitting any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose, without financial, legal, or technical barriers other than those inseparable from gaining access to the Internet itself.*

OPEN ACCESS INDIA

For creating awareness among the graduate students, early career researchers, professors, research managers and the policy makers on opening up of the access to the publicly funded research in India, 'Open Access India,' a community of practice advocating Open Access, Open data, Open education in India has been formed initially as an online Facebook group on 8th July 2011.

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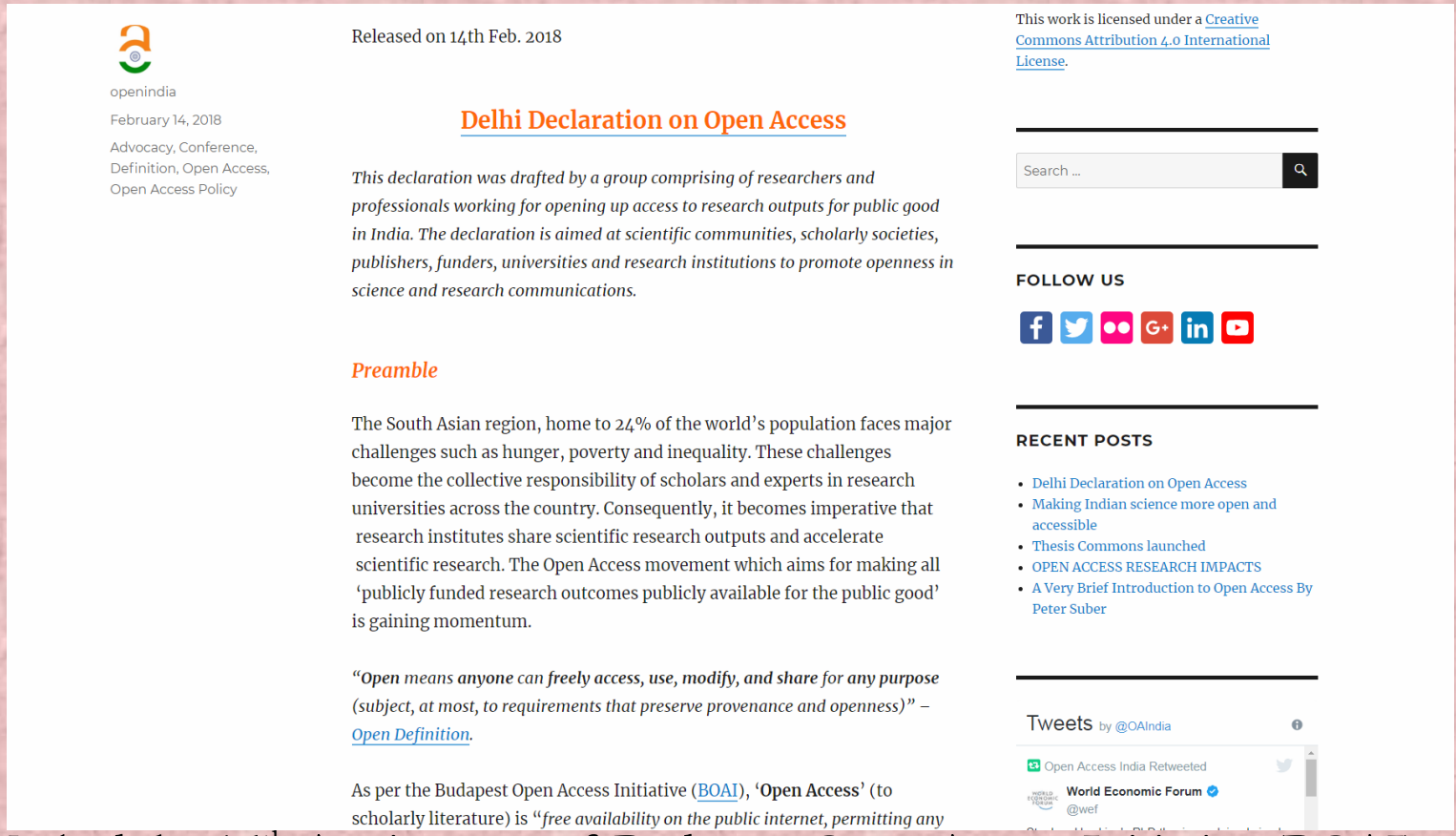
Saturday, November 12

Delhi Declaration on Open Access
(Released on 14th February 2018)



openindia

February 14, 2018

Advocacy, Conference, Definition, Open Access, Open Access Policy

Released on 14th Feb. 2018

Delhi Declaration on Open Access

This declaration was drafted by a group comprising of researchers and professionals working for opening up access to research outputs for public good in India. The declaration is aimed at scientific communities, scholarly societies, publishers, funders, universities and research institutions to promote openness in science and research communications.

Preamble

The South Asian region, home to 24% of the world's population faces major challenges such as hunger, poverty and inequality. These challenges become the collective responsibility of scholars and experts in research universities across the country. Consequently, it becomes imperative that research institutes share scientific research outputs and accelerate scientific research. The Open Access movement which aims for making all 'publicly funded research outcomes publicly available for the public good' is gaining momentum.

*"**Open** means **anyone** can **freely access, use, modify, and share** for **any purpose** (subject, at most, to requirements that preserve provenance and openness)" – Open Definition.*

As per the Budapest Open Access Initiative (BOAI), '**Open Access**' (to scholarly literature) is "*free availability on the public internet, permitting any*

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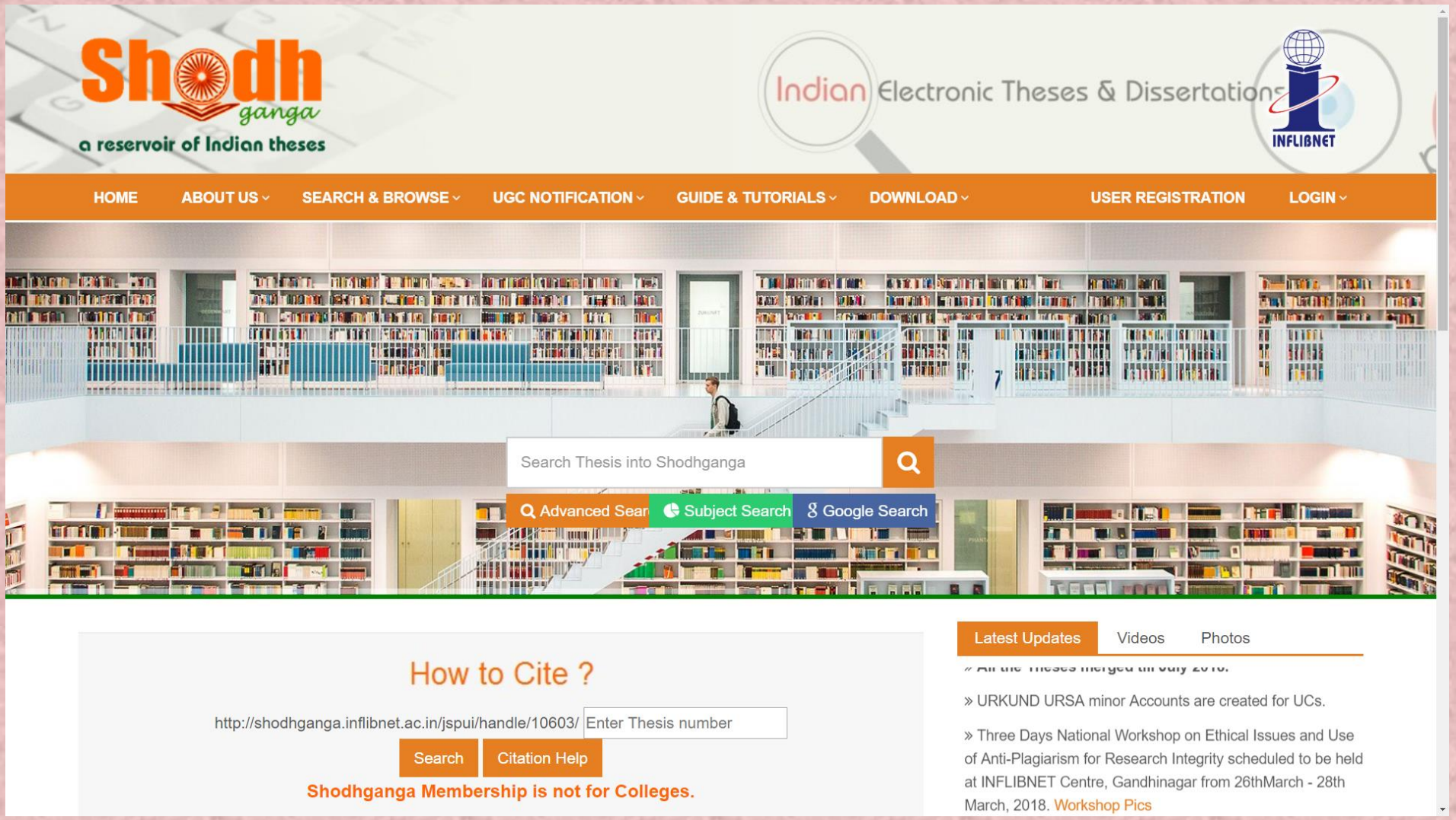
- Marked the 16th Anniversary of Budapest Open Access Initiative (BOAI)
- 120+ Signatories from the Global South
- Supported by the Knowledge Societies Division of UNESCO; IFLA RSCAO; Forum for Open Access in SAARC, etc.
- Online: http://openaccessindia.org/delhi-declaration-on-open-access/

Advocacy for Open Science: Some Recent Success Stories

- In 2011, ***Shodhganga: A Reservoir of Indian Theses*** was launched by INFLIBNET Centre, to serve the mandates of the UGC Notification (Minimum Standards & Procedure for Award of MPhil/PhD Degree, Regulation, 2009) dated 1 June 2009, to facilitate open access to Indian theses and dissertations for global dissemination to the academic community world-wide.

- In December 2014, the Department of Biotechnology (DBT) and the Department of Science and Technology (DST), Government of India had jointly adopted the ***DST/DBT Open Access Policy***.

http://shodhganga.inflibnet.ac.in



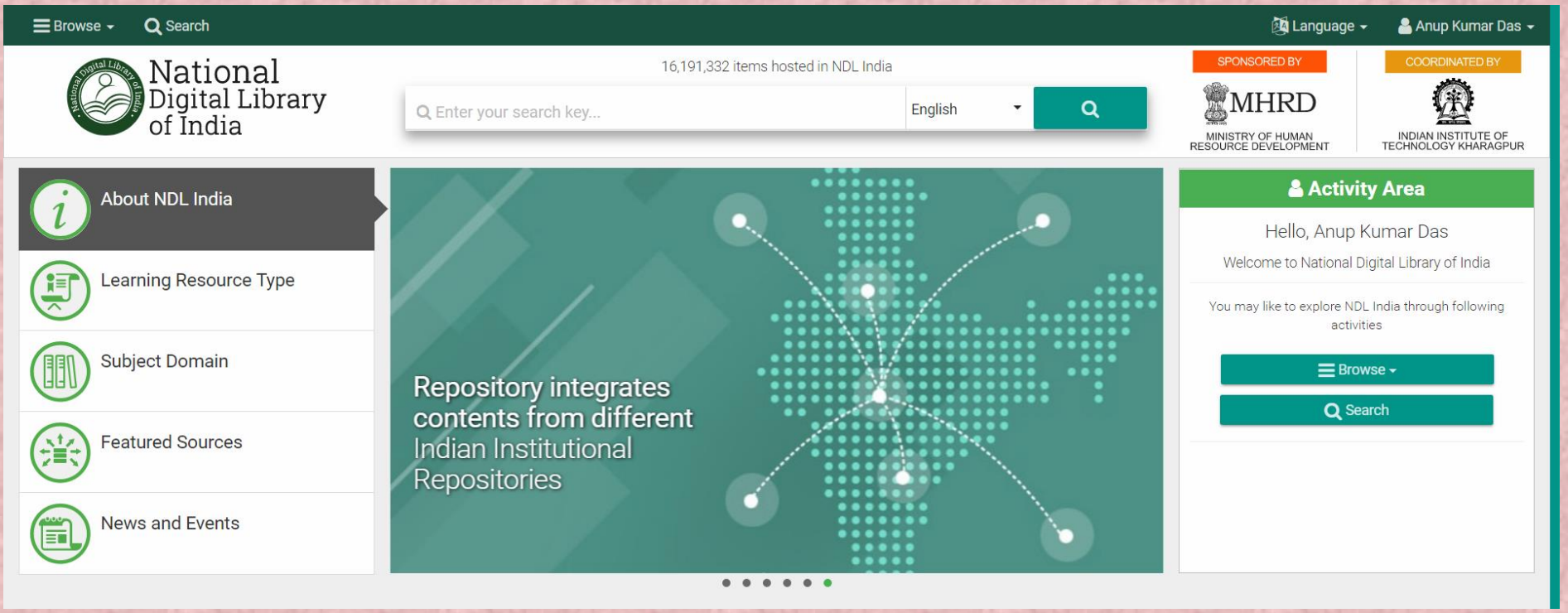
269733 Full-text Theses & Dissertations (available globally)

438 Contributing Universities

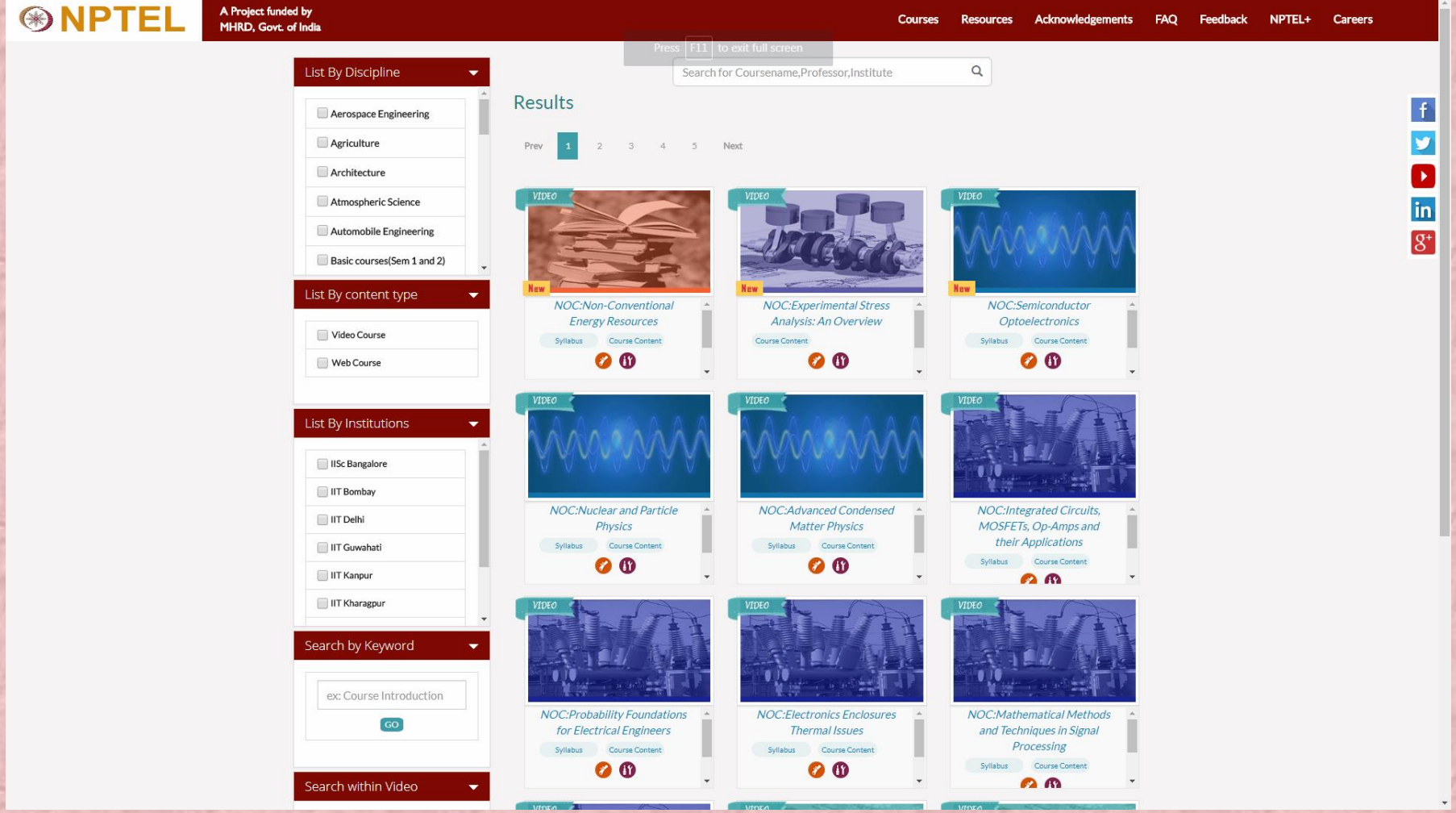
UNESCO Open Access (OA) Curriculum for Researchers | Library Schools

- In March 2015, UNESCO and CEMCA (Commonwealth of Learning) jointly launched an *Open Access Curriculum for Researchers*, and *an Open Access Curriculum for Library Schools*.

- 9 modules are freely available and downloadable online.



- National Digital Library of India
- https://ndl.iitkgp.ac.in
- Integrates contents from different Indian OA repositories | A kind of Metadata Harvesting Service
- 47,914,824 items indexed/ hosted in NDL India (as on 20-04-2020)



- NPTEL (National Programme on Technology Enhanced Learning) offers OpenCourseware and Open Educational Resources (OER) | www.nptel.ac.in
- An Initiative by seven Indian Institutes of Technology (IIT Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras & Roorkee) and Indian Institute of Science (IISc) for creating course contents in engineering and science subjects.
- Accessible Worldwide, very popular in the Global South
- English Language Contents – Video Lectures and Textual Resources

ICSSR Data Service (ICSSRDataService.in) is culmination of signing of Memorandum of Understanding (MoU) between Indian Council of Social Science Research (ICSSR) and Ministry of Statistics and Programme Implementation (MoSPI). The MoU provides for setting-up of "ICSSR Data Service: Social Science Data Repository" and host NSS and ASI datasets generated by MoSPI.

Table 3.1: Various Author Rights Regime

	Symbol	Rights Statement
Copyright		All rights reserved.
Copyleft		All wrongs reserved.
Creative Commons		Some rights reserved.

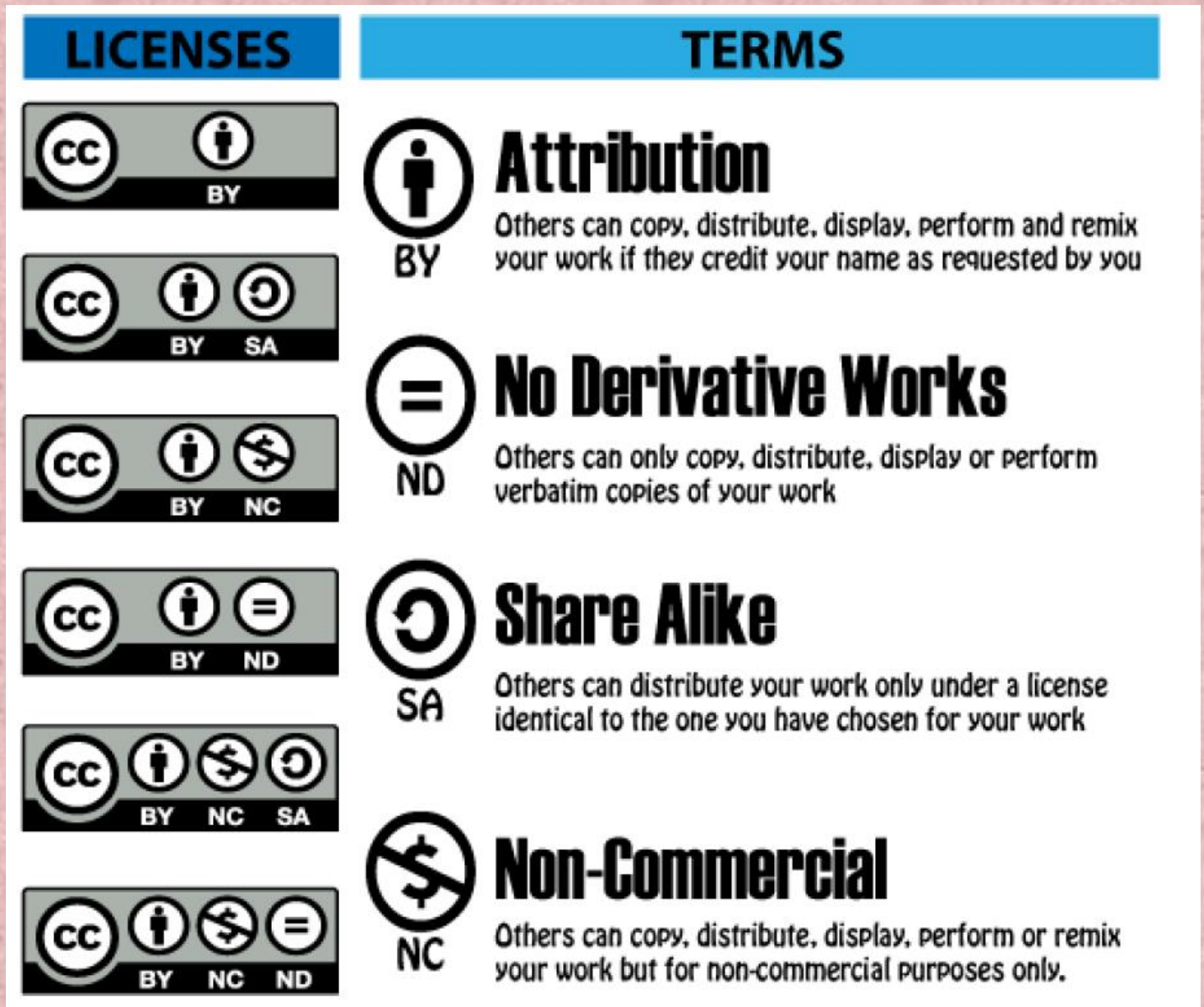
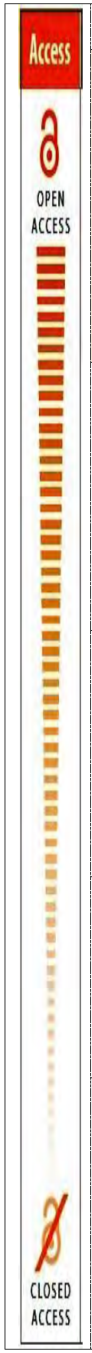


Figure 3.1: Understanding Creative Commons Licenses[20]

Table 3.2: Understanding Fully Open Access Resources from the "Open Access Spectrum"



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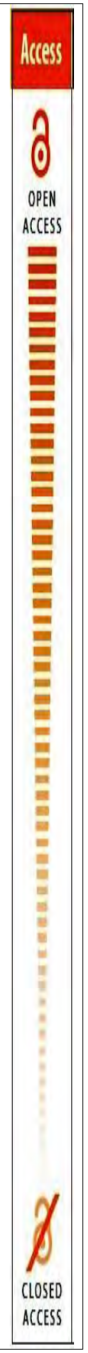

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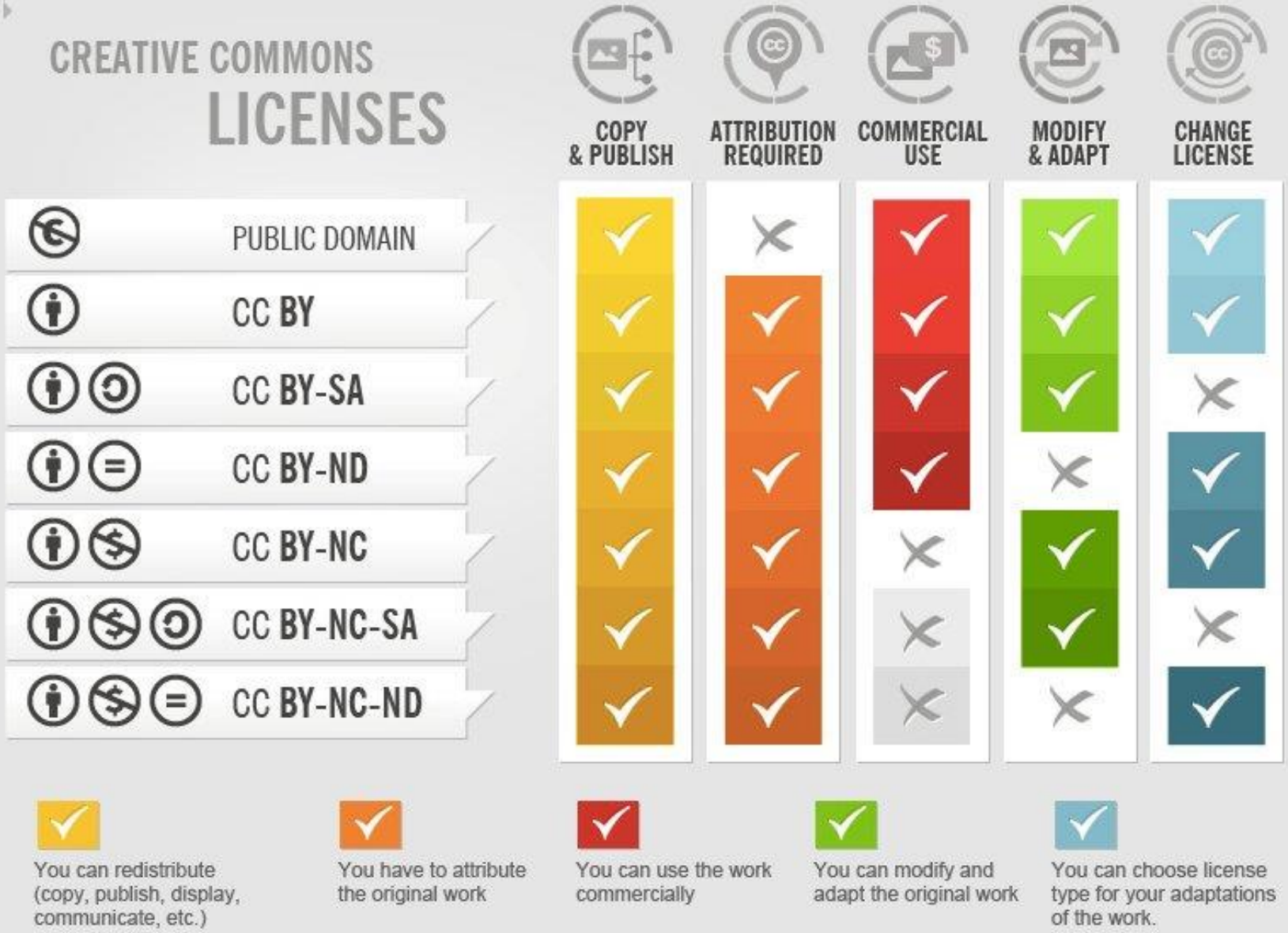

ALTMETRICS

- **Article Level Metrics (ALM)** - comprehensive and multidimensional suite of established metrics at the article level. http://article-level-metrics.plos.org/alm-info/
- **Altmetrics** – creation and study of new metrics based on the social web for analyzing, and informing scholarship. Altmetrics Manifesto, http://altmetric.org/about

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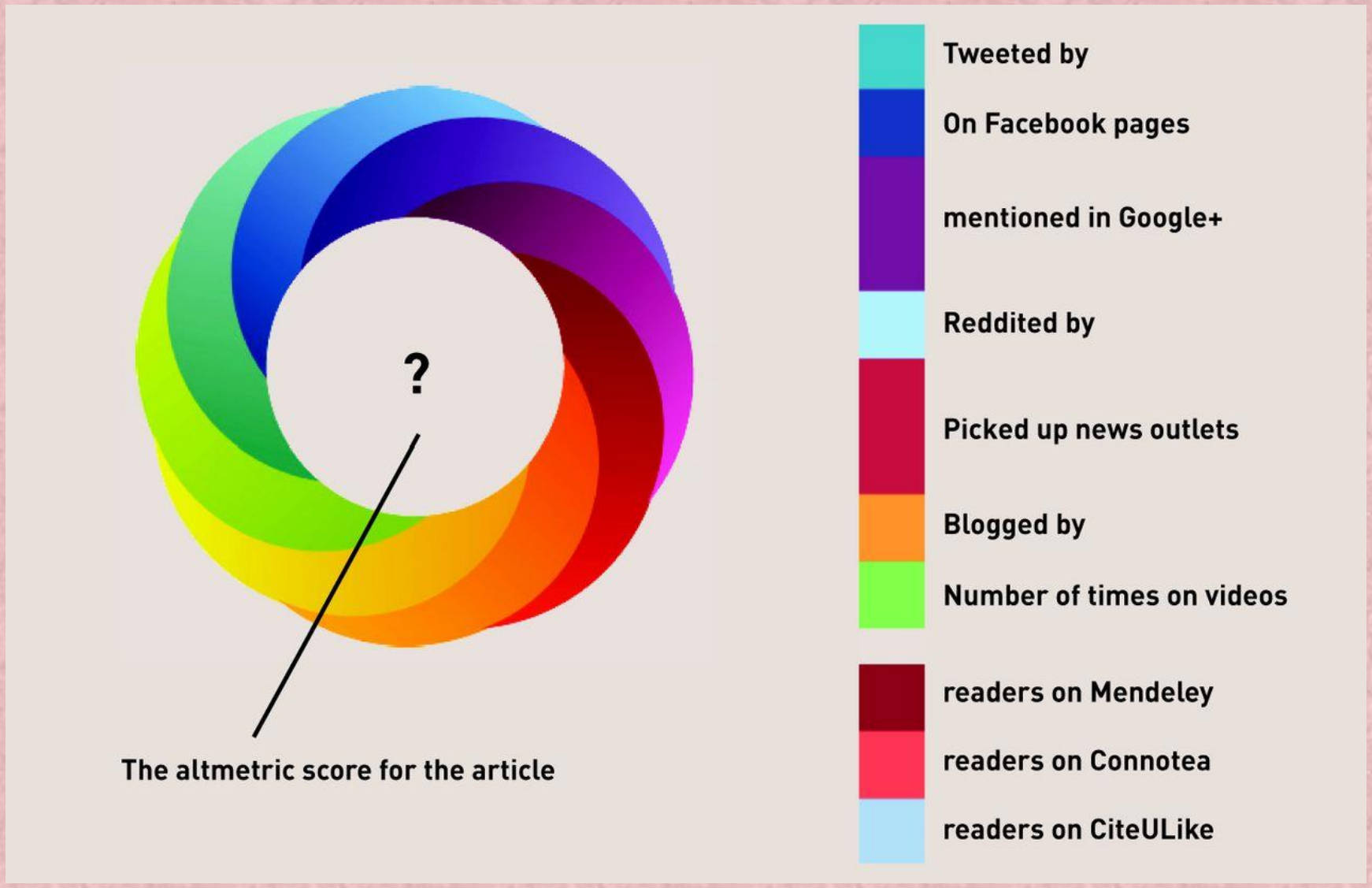
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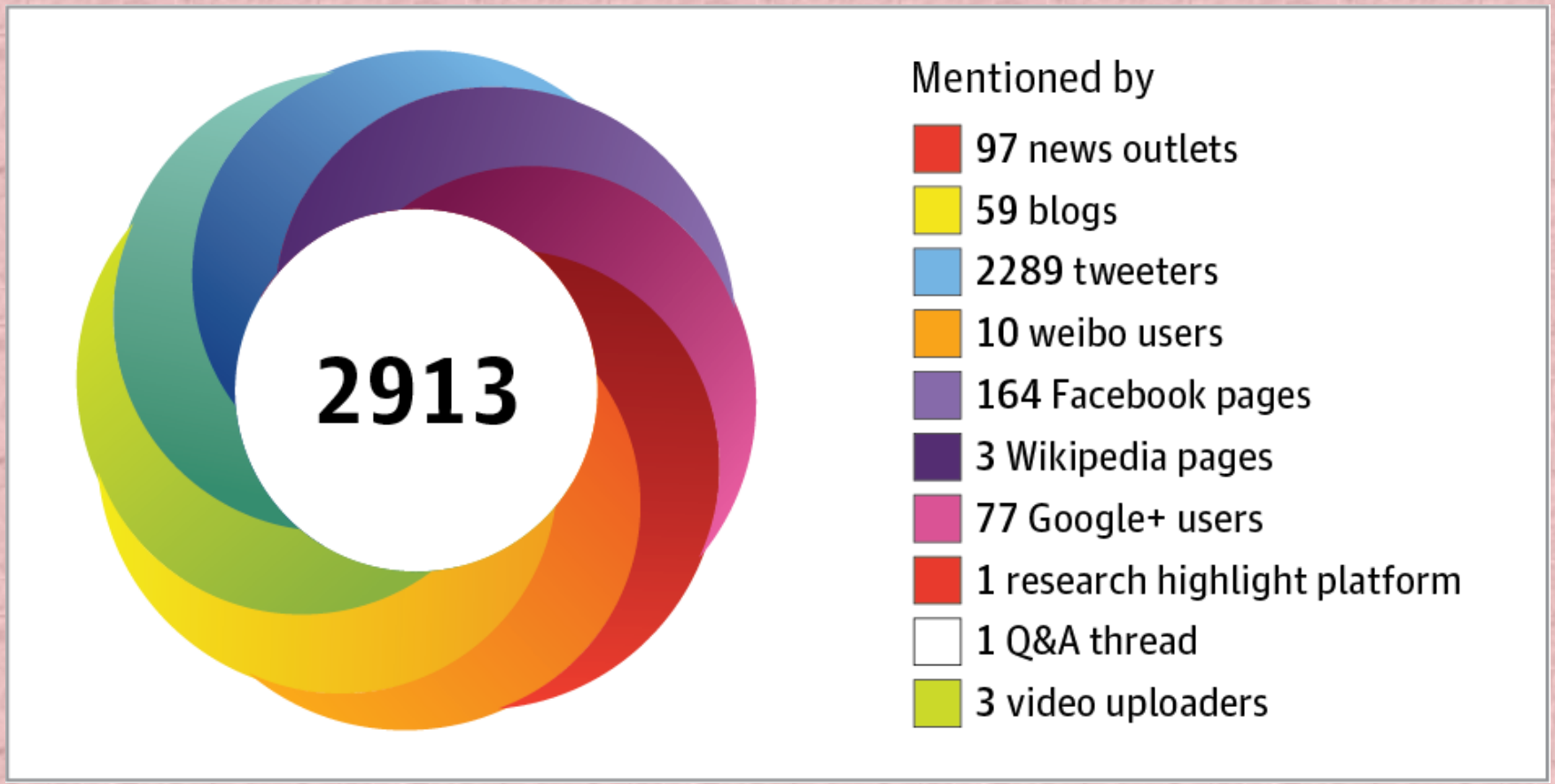
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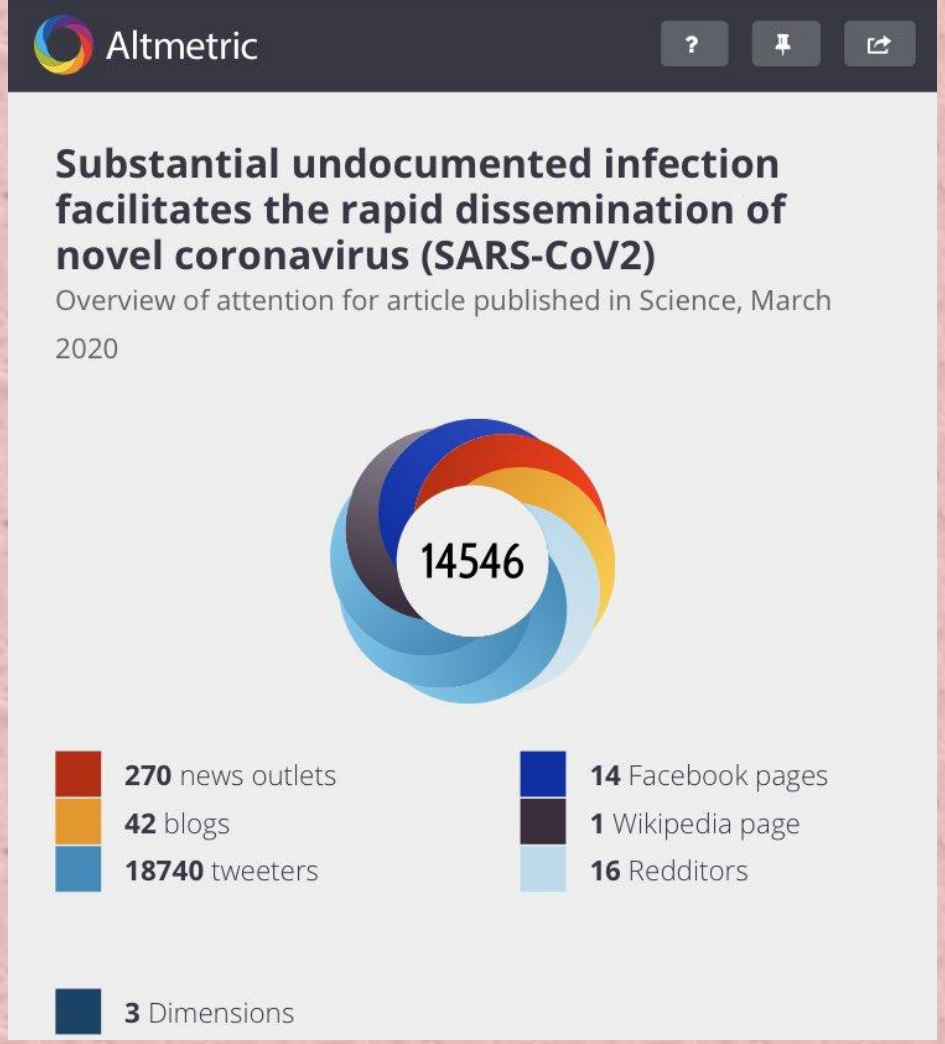

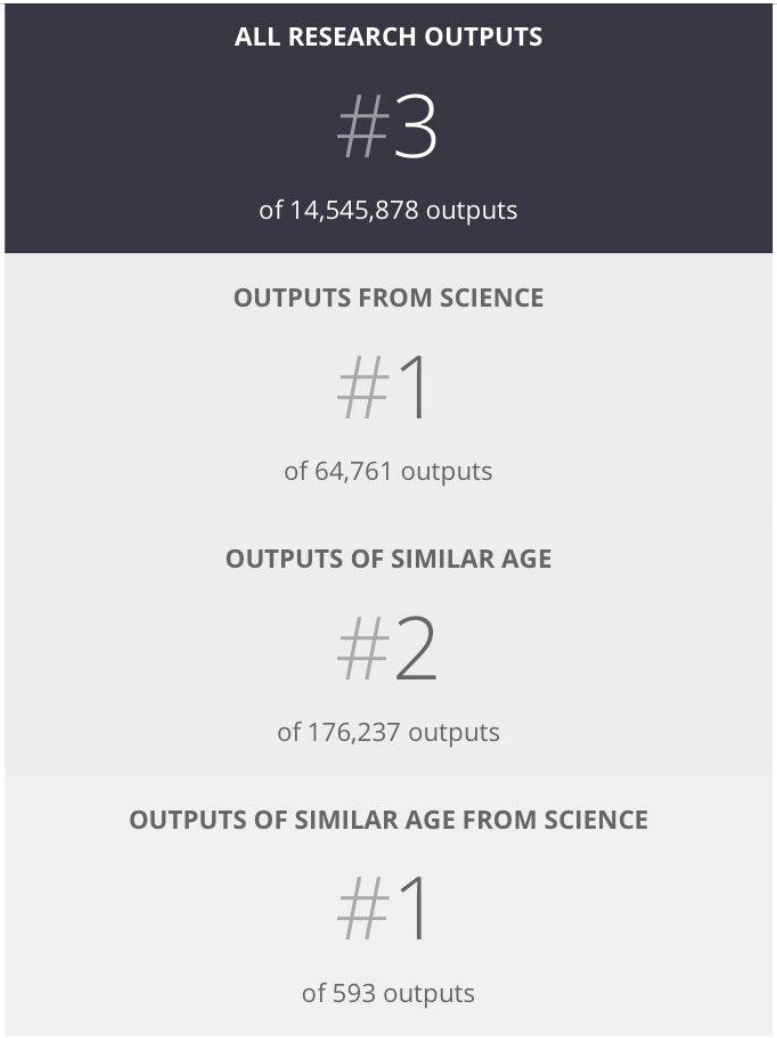

Two weeks after its publication in @ScienceMagazine, our research on COVID-19 has risen to #1 in Altmetric score among all 65K outputs from Science, and #3 among tracked 14.5M research outputs from all sources so far. Our work is making an impact.

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