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SMU Libraries

3-2021

How can organisations benefit from open access research knowledge?

Aaron Tay

Singapore Management University, aarontay@smu.edu.sg

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**HOW CAN
ORGANISATIONS BENEFIT
FROM OPEN ACCESS
RESEARCH KNOWLEDGE?
ISKO-SG – 26th March
2021**

Aaron Tay

SMU Libraries

● Data Services, Lead



A talk in three parts

- Open Access where we are right now
- How to access OA articles
- Innovative tools that leverage open access and open data

Disagreements in Open Access

- Goals
- Methods
- Facts

The definition I will use for Open Access

"Open access (OA) literature is digital, online, free of charge, and free of most copyright and licensing restrictions." -- (Suber 2012)

See also **Budapest Open Access Initiative (BOAI), Berlin Declaration on Open Access, Bethesda Statement on Open Access Publishing**

How much open access is there now?

2014

"As of April 2014, more than 50% of the scientific papers published between 2007, 2008, 2009, 2010, 2011 and 2012 can be downloaded for free from the Internet."

Archambault, É., Amyot, D., Deschamps, P., Nicol, A., Provencal, R., Roberge, G. (2014). Proportion of open access papers published in scientific journals at the European and world levels—1996–2013.

2017

"In other words, Lazy Scholar finds a free full text somewhere between **36-41%** of the time.. If I restrict the analysis to only papers where a DOI is available, Lazy Scholar finds a free full text **49-54%** of the time"

<http://www.lazyscholar.org/2017/10/06/new-statistics-on-full-text-availability-using-lazy-scholar/>

How much open access is there now?

2018

“... we find that Unpaywa
encounter OA quite frequ
47% of articles they view

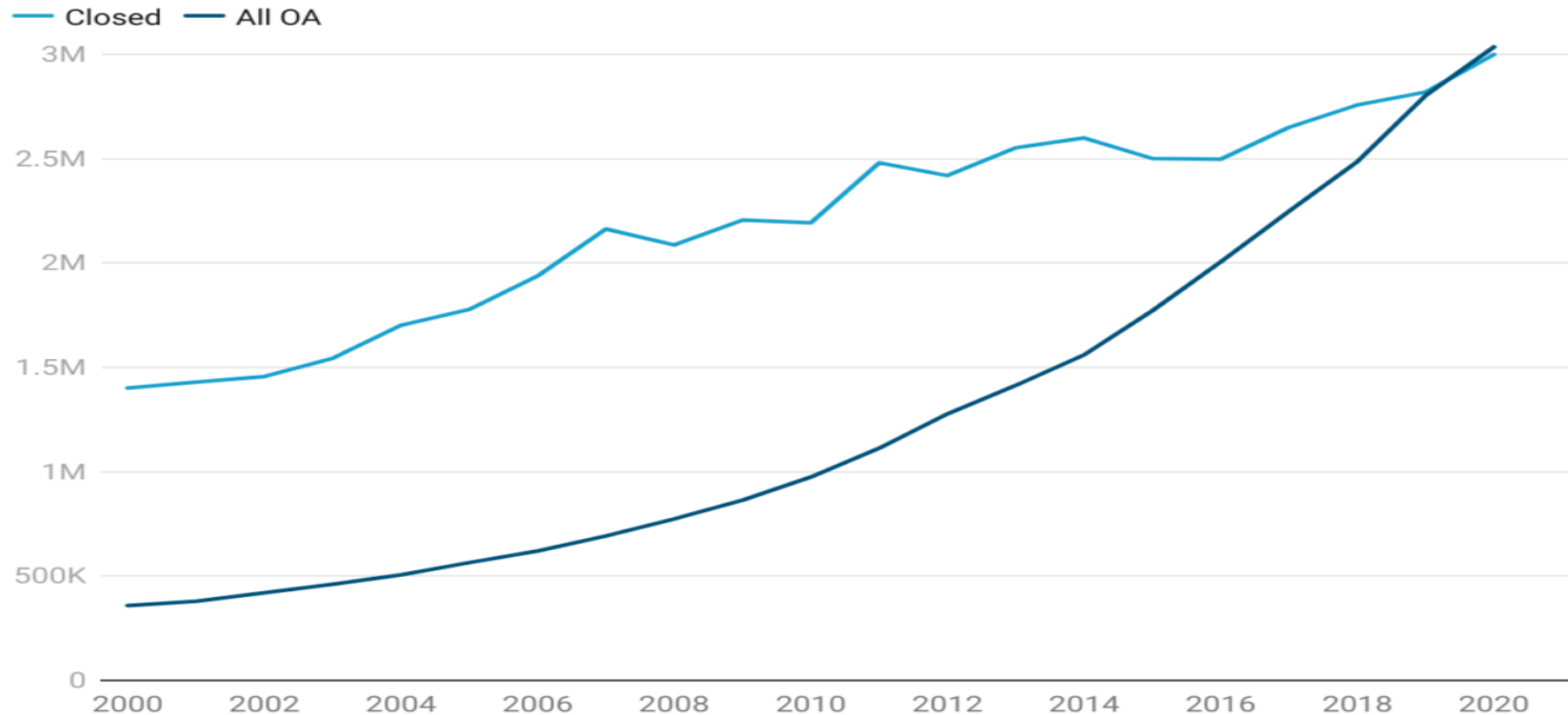
Piwowar, H., Priem, J., Larivière, V., Alperin, J. P., Matthi
Haustein, S. (2018). The State of OA: A large-scale analy:
impact of Open Access articles. PeerJ, 6, e4375.

2018

“The data shows an overall free availability of **54.6%**,
... The data extracted from GS yielded very similar
results to those found by other studies that analysed
similar samples of documents, but employed
different methods to find evidence of OA, thus
suggesting a relative consistency among methods”

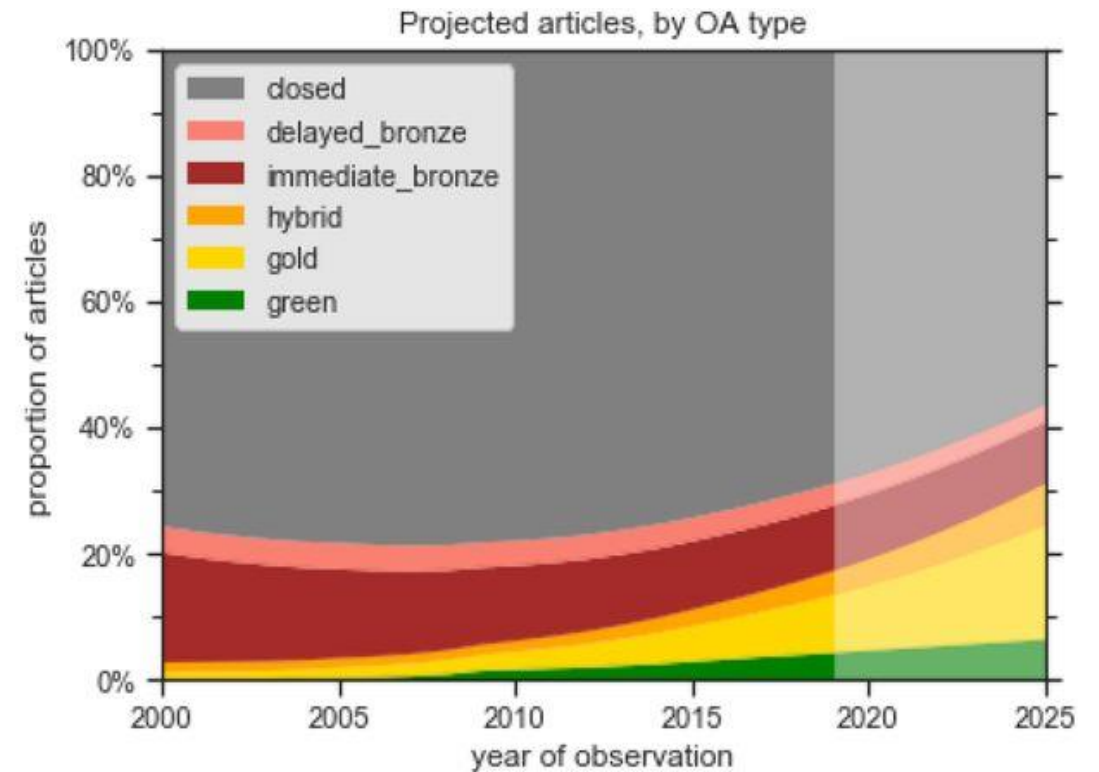
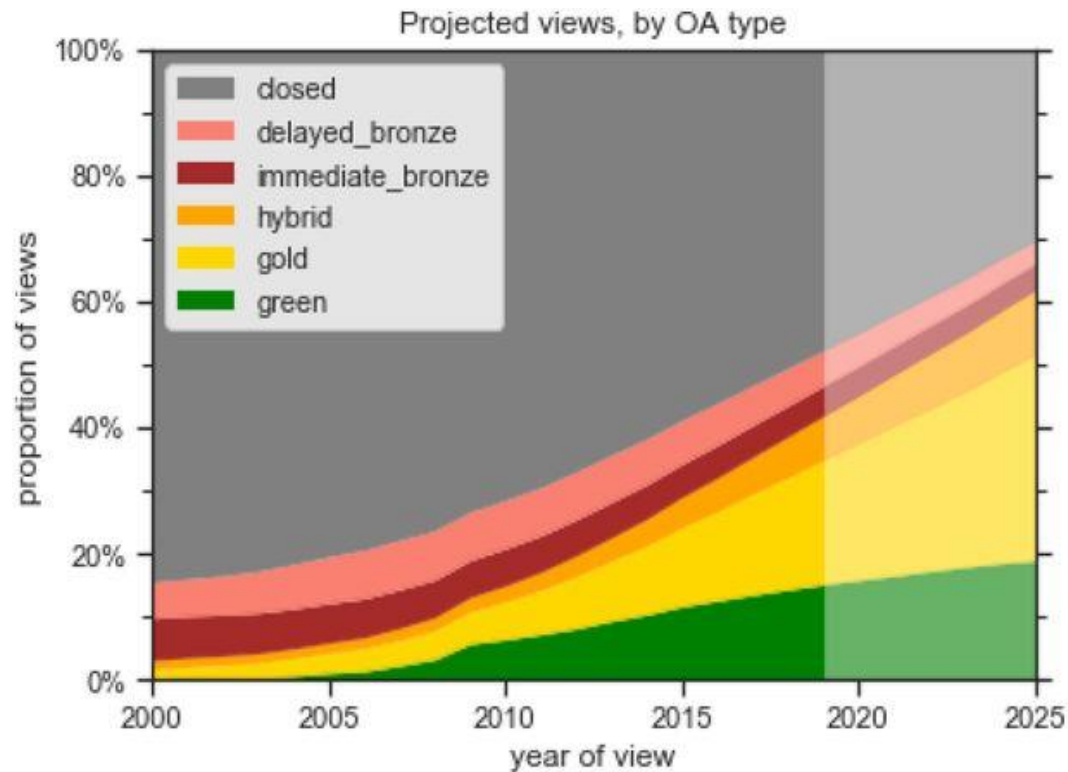
Martín-Martín, A., Costas, R., van Leeuwen, T., & López-Cózar, E. D. (2018).
Evidence of Open Access of scientific publications in Google Scholar: a large-scale
analysis. arXiv preprint arXiv:1803.06161.

OA tipping point 2020 – According to Dimensions



Open Access surpasses subscription publication globally for the first time

Projections of Open Access (conservative)



Piowar, H., Priem, J., & Orr, R. (2019). The Future of OA: A large-scale analysis projecting Open Access publication and readership. *BioRxiv*, 795310.

Projections of Open Access

In 2019:

- 31% of all journal articles are available as OA
- 52% of article views are to OA articles

Given existing trends, we estimate that by 2025:

- 44% of all journal articles will be available as OA
- 70% of article views will be to OA articles

Piowar, H., Priem, J., & Orr, R. (2019). The Future of OA: A large-scale analysis projecting Open Access publication and readership. *BioRxiv*, 795310.

Shift to
Open
Access is
accelerating

Rise in preprint servers –
impact of COVID-19

Plan S

Move to transformative
deals e.g. [UC deal with Elsevier](#)



Accessing OA content

Scenario 1 - Searching
for OA content on a
certain topic

Scenario 2- Checking
if OA version of a
specific item exists

Scenario 1 - Searching for OA content on a certain topic

The screenshot shows the Harvard Library Hollis search interface. The search bar contains the text "absorptive capacity". Below the search bar, there is a notification for Harvard affiliates to sign in. The search results page shows "PAGE 1 19,077 Results". A filter for "Open Access" is highlighted with a red box in the "Active filters" section. The first search result is an article titled "The emergence of absorptive capacity through micro-macro level interactions" by Martinkenaite, Ieva; Breunig, Karl Joachim, published in the Journal of Business Research, 2016-02, Vol. 69 (2), p. 700-708. The article is marked as "PEER REVIEWED" and "OPEN ACCESS". There are links for "VIEW PDF" and "ONLINE ACCESS".

Examples

- [Harvard Library Hollis](#)
- [UCLA articleplus](#)
- [Oxford University Solo](#)
- [National University of Singapore Findmore](#)

Most academic libraries now have a filter to OA option for their search!

Other Free non library Search engines that can filter to free



31 million



33 million



ifindr

38 million



SEMANTIC SCHOLAR

BASE Search
NAVER Academic
Scilit
Worldcat

Free Search engines that index only free content



The world's largest collection of open access research papers

<https://www.jisc.ac.uk/core>



<https://www.doabooks.org/>



<https://doaj.org/>

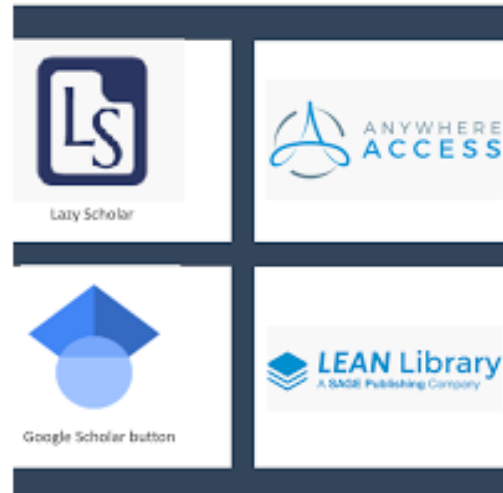
Others
[OAISTER](#)

Free thesis database

- [CORE](#)
- [BASE](#)
- [Open Access Theses and Dissertations](#)
- [PQDT open](#)
- [Ebsco Open Dissertations](#)

Scenario 2 – check if version of a specific item exists

- Save time – use a browser extension!



JUL 3 A comparison of 6 Access Broker browser extensions
Lean Library, Kopernio, Anywhere Access, Libkey
Nomad & more

Updated 27/8/2019 - Libkey Nomad now supports open access via Unpaywall (accepted manuscript) on top of full OA journals already in Libkey Knowledgebase. Kopernio now allows institutions which are WOS customers to setup library link resolver as a fall-back.

Updated 28/8/2019 - Created new section on importance of checking support of different domains users visit.

<https://musingsaboutlibrarianship.blogspot.com/2019/07/a-comparison-of-6-access-broker-browser.html>

Idea

SAGE journals Search Browse Resources Access Options: Sign In Institution Society Cart

Account Administrators: Review your remote access options for SAGE Journals

History of Science

1.000 Impact Factor
5-Year Impact Factor 0.915
Journal Indexing & Metrics

Journal Home Browse Journal Journal Info Stay Connected **Submit Paper**

Article Menu

Access Options

History of Science and its Sociological Reconstructions

Steven Shapin

First Published September 1, 1982 | Research Article
<https://doi.org/10.1177/007327538202000301>

[Article information](#)

SAGE Recommends

OA finding browser extensions – with institutional access



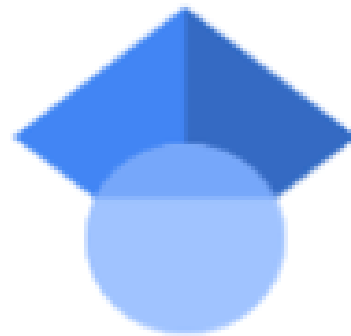
<https://www.leanlibrary.com/> (easy access) 100k installs



<https://thirdiron.com/products/libkey-nomad/> 100k installs

EndNote™ Click
Formerly Kopernio

<https://kopernio.com/> 900k installs



Google Scholar button



<http://www.lazyscholar.org/> 10k installs

<https://chrome.google.com/webstore/detail/google-scholar-button/ldipcbpaocekfoobnbcddclnhejkcpn?hl=en> (2 million installs)

OA finding browser extensions – no institutional access



Google Scholar button

[Google Scholar button](#) - Best bet (2 million installs)



Unpaywall

Offered by: unpaywall.org

[Unpaywall](#) - Most 'open' (300,000 installs)



[Lazy Scholar](#) - Most features (10,000 installs)



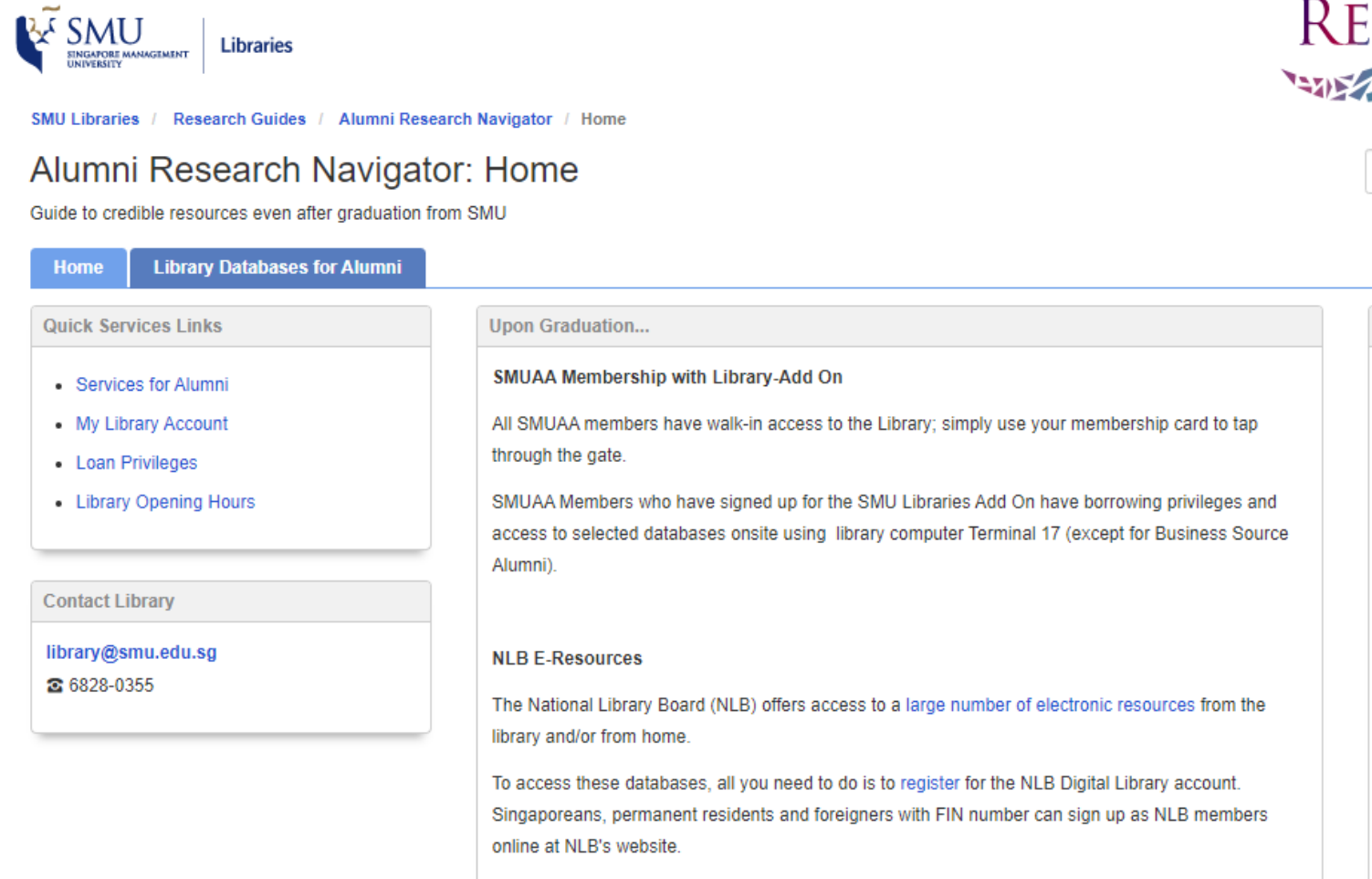
CORE Discovery

Offered by: CORE

[CORE discovery](#)- Higher recall, lower precision (2k 2k installs)

Other options

- Alumni Access
- NLB
- Write to the author
(full-text request in ResearchGate)



The screenshot shows the SMU Libraries Alumni Research Navigator website. The header includes the SMU logo and the text "Libraries". Below the header is a breadcrumb trail: "SMU Libraries / Research Guides / Alumni Research Navigator / Home". The main title is "Alumni Research Navigator: Home" with a subtitle "Guide to credible resources even after graduation from SMU". There are two tabs: "Home" and "Library Databases for Alumni".

Quick Services Links

- [Services for Alumni](#)
- [My Library Account](#)
- [Loan Privileges](#)
- [Library Opening Hours](#)

Contact Library

library@smu.edu.sg
☎ 6828-0355

Upon Graduation...

SMUAA Membership with Library-Add On

All SMUAA members have walk-in access to the Library; simply use your membership card to tap through the gate.

SMUAA Members who have signed up for the SMU Libraries Add On have borrowing privileges and access to selected databases onsite using library computer Terminal 17 (except for Business Source Alumni).

NLB E-Resources

The National Library Board (NLB) offers access to a [large number of electronic resources](#) from the library and/or from home.

To access these databases, all you need to do is to [register](#) for the NLB Digital Library account. Singaporeans, permanent residents and foreigners with FIN number can sign up as NLB members online at NLB's website.

<https://researchguides.smu.edu.sg/c.php?g=421794&p=2880348>

A large African elephant with prominent tusks stands in a savanna field. The elephant is the central focus, facing the camera. The background consists of a vast, open landscape with dry, golden-brown grass and scattered trees under a bright, slightly cloudy sky. The text "Elephant in the room — Sci-hub" is overlaid in white, sans-serif font across the lower portion of the image.

Elephant in the room — Sci-hub

Text mining facilitates materials

The authors validated this approach by training a model using literature published before a particular cutoff year, and then checking to see whether it identified materials that were reported to be thermoelectric in subsequent years. The top 50 materials picked using this method were 8 times as likely to have been studied as a thermoelectric in the 5 years after they had been reported than were randomly chosen materials.

<https://www.nature.com/articles/d41586-019-01978-x>

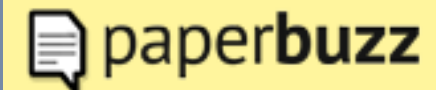
OA - Going beyond reading

".... this is a chance to finally **cash the cheques written by the Open Access movement.** It's a chance to truly open up access to the frontiers of human knowledge to *all humans.*"

<https://gettheresearch.org/>

A decorative graphic consisting of several short, thick, red dashed lines arranged in a curved, upward-sloping pattern in the bottom right corner of the slide.

Open metadata sources- a sample



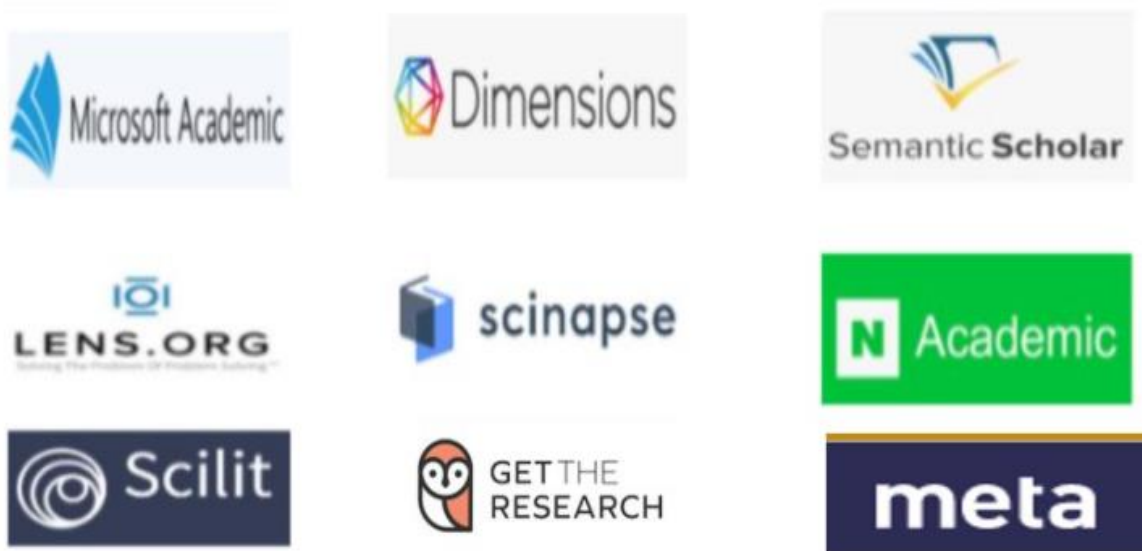
Not just
Open
Access - The
rise of the
open
scholarly
metadata

Scholarly discovery,
citation index

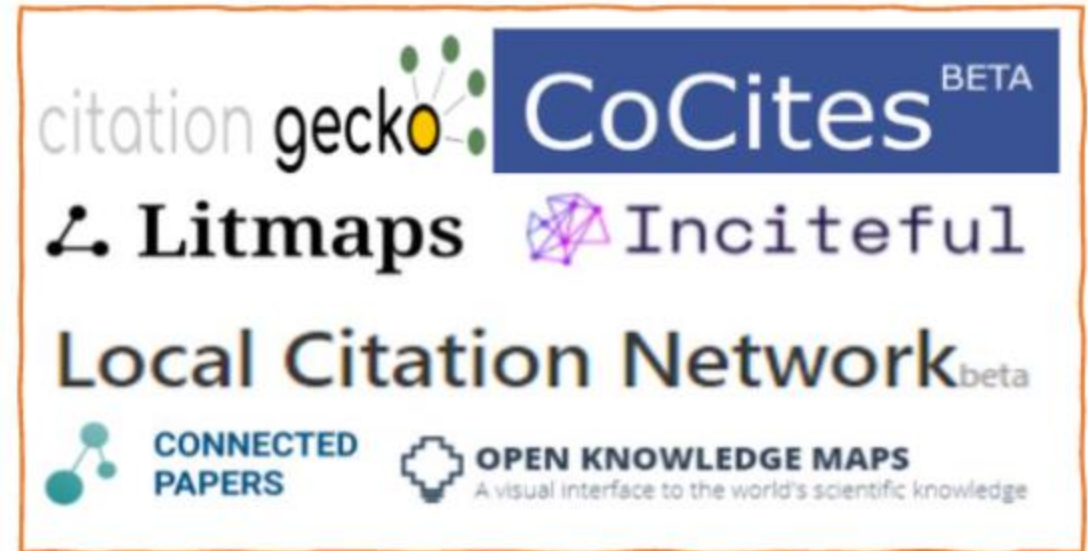
Mapping literature
review tools

Paper summarizers (e.g.
Scholarcy Paperdigest)

Open Scholarly metadata enables new tools

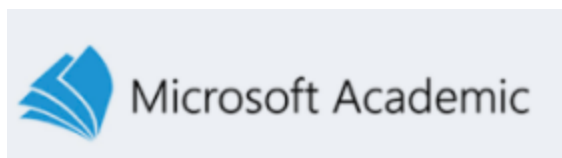


New "Open" Discovery indexes



New "Open" literature mapping tools

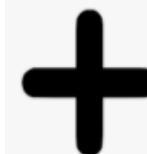
Lens is a paradigm example of a Scholarly engine built on open data



Full text

Info + links to OA

Title, author, abstract, citations

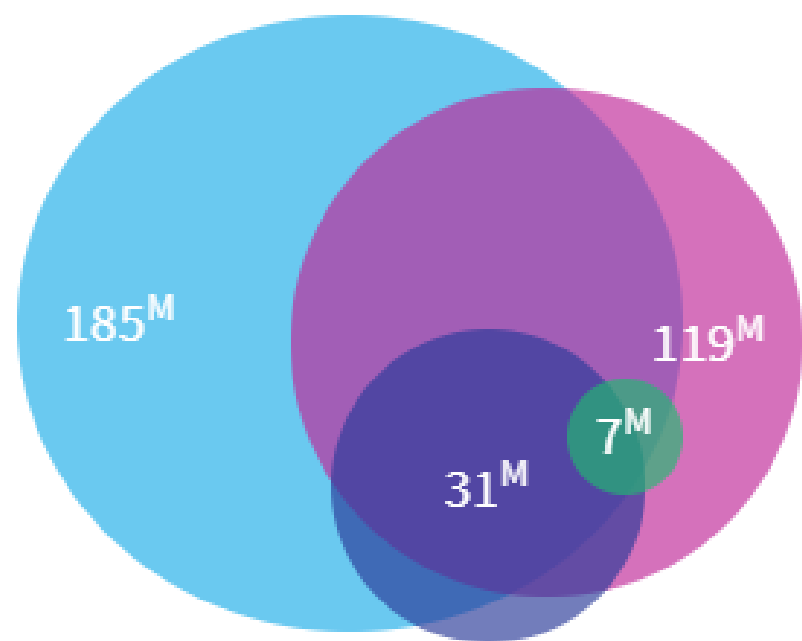


Patents

Scholarly Data Set

 Last Updated: Mar 15, 2021

The below scholarly data sources are currently ingested and integrated in the Lens. Updates are performed on a fortnightly basis at the present time.



● Microsoft ● CrossRef ● PubMed
● Core

Breakdown (Counts are approximate.)

942.5K Source Titles

722.2K Fields of Study

333 Journal Subjects

3.9M Keywords

250.2K Chemicals

29.7K MeSH Headings

19.1K Institutions

1.7M Funding Organisations

4.6K Conferences

Further breakdown of scholarly works:

77M Cited By Scholarly Works

4.4M Cited By Patent

8.6M Have Funding

15.2K Have Clinical Trial

39.5M Open Access

Another example – Fatcat (by Internet Archive)

Sources of Metadata

The source of all bibliographic information is recorded in edit history metadata, which allows the provenance of all records to be reconstructed. A few major sources are worth highlighting here:

- Release metadata from **Crossref**, via their public [REST API](#)
- Release metadata and linked full-text content from NIH **Pubmed** and [arXiv.org](#)
- Release metadata and linked public domain full-text content the **JSTOR** Early Journal Content collection
- Creator names and de-duplication from **ORCID**, via their annual public data releases
- Journal title metadata from **DOAJ**, **ISSN ROAD**, and **SHERPA/RoMEO**
- Full-text URL lists from [CORE](#), [Unpaywall](#), [Semantic Scholar](#), [CiteseerX](#), and [Microsoft Academic Graph](#).
- [The Guide](#) lists more major sources

<https://fatcat.wiki/about>

Demo of two interesting "open" Discovery index

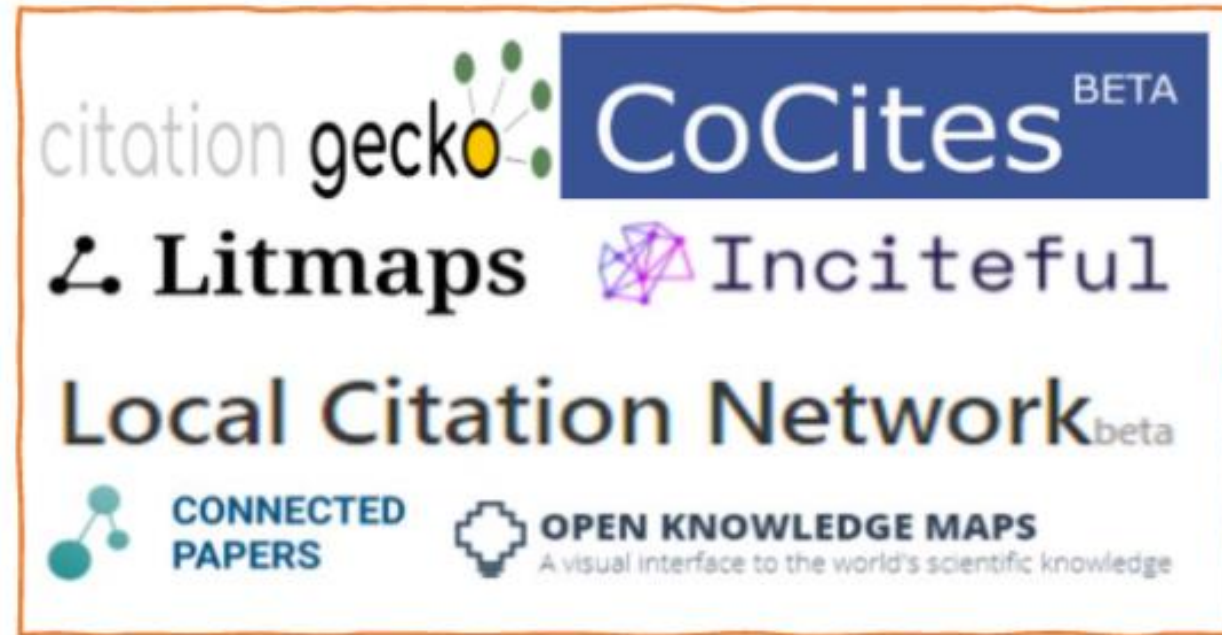


Lens.org



Semantic Scholar (see also
scite.ai)

Open Scholarly metadata enables new tools



New "Open" literature mapping tools

Data Sources of citation mapping tools

	Citation sources
<u>Litmaps</u>	Microsoft Academic Graph (mainly), with some previous data imports from Crossref and Semantic Scholar . Currently covers only items with DOI
<u>Connected Papers</u>	Semantic Scholar Open Research Corpus
<u>Inciteful</u>	Microsoft Academic Graph , Crossref, OpenCitations , Semantic Scholar Open Corpusn
<u>Citation Gecko</u>	Crossref
<u>Location Citation Network</u>	Microsoft Academic Graph or Crossref
More at List of Innovative Literature mapping tools	

Demo of two interesting literature mapping tool



Connected Papers



Litmaps

Litmaps

[List of Innovative Literature mapping tools](#)

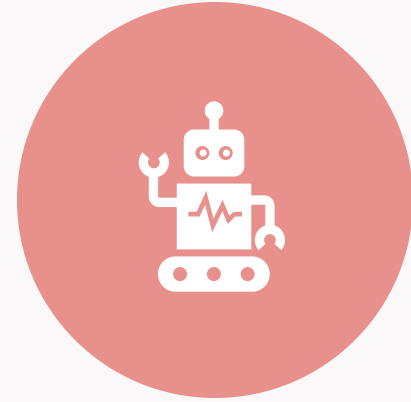
We can expect more innovation as...



MORE OPEN ACCESS



MORE SCHOLARLY
METADATA IS MADE
AVAILABLE



IMPROVEMENTS IN MACHINE
LEARNING + NLP (E.G.
SCIBERT, GPT ETC)

Some recent s UC and Elsevier

Huge open-access journal deal California and Springer Nature

By Jeffrey Brainard | Jun. 16, 2020, 11:00 AM

The University of California (UC) system today announced a new open access (OA) deal in North America with one of the largest content providers. The agreement with Springer Nature includes a commitment to make all articles that UC corresponding authors publish in the journals available to read on publication starting in 2022.

The new deal is notable, in part, because it includes 10 top journals, as well as highly selective sister titles in the Elsevier portfolio. "These flagship journals are the hardest nut to crack, and we think worldwide, in doing so," says Jeffrey Brainard, UC Berkeley and co-chair of UC's publisher negotiation team.

UPDATE AS OF MARCH 16, 2021

University of California now has an agreement that achieves both of the university's goals for all publisher agreements: (1) Enabling universal open access to all UC research; and (2) Containing the excessively high costs associated with licensing journals. In addition, the agreement restores as of April 1, 2021, UC's direct online reading access to all previously subscribed Elsevier journals and some additional journals to which UC did not subscribe previously.

<https://www.sciencemag.org/news/2020/06/huge-open-access-journal-deal-linked-university-california-and-springer-nature>

<https://osc.universityofcalifornia.edu/uc-publisher-relationships/uc-and-elsevier/>

Earlier transformative deals

"... nation after nation in Europe has struck transformative agreements with the major commercial publishers. Elsevier alone has secured national level transformative agreements with Austria, Finland, Hungary, Ireland, Netherlands, Norway, Poland, Sweden, and Switzerland. Elsevier also has transformative agreements in Japan, Qatar and South Korea."

<https://scholarlykitchen.sspnet.org/2021/03/16/the-biggest-big-deal/>

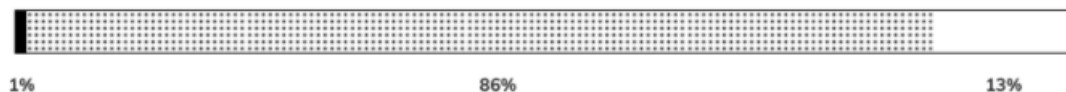
Some recent successes in making citations open

I4OC @i4oc_org

Replying to @i4oc_org

With Wolters Kluwer Health and the latest additions to the I4OC we're at 87% coverage of the scholarly literature with references indexed in @CrossrefOrg. 🚀

How many citations are open today?



As of March 2021, the fraction of publications with open references has grown from 1% to 87% out of 54.2 million articles with references deposited with Crossref.



Dario Taraborelli @ReaderMeter · Mar 19

This 4yo slide keeps getting better 😊

The road to 100%

Major publishers among the top 20 DOI depositors *not* distributing open references (as of October 2017)

~~Elsevier~~

IEEE

NEW! ~~Wolters Kluwer Health~~

~~IOP Publishing~~

~~Oxford University Press~~

~~American Chemical Society~~

<https://i4oc.org/>

New initiative – I4OA (Initiative for Open Abstracts)



Jason Priem #BLM
@jasonpriem

Yes! This is a fantastic idea! Can you imagine how many amazing things we could build if all abstracts were open??? SO MANY AMAZING THINGS.



Initiative for Open Abstracts @open_abstracts · Sep 24

We're thrilled to announce the launch of the Initiative for Open Abstracts, a new initiative that calls for unrestricted availability of abstracts to boost the discovery of research i4oa.org #I4OA

[Show this thread](#)

<https://i4oa.org>
openabstracts@gmail.com
[@open_abstracts](https://twitter.com/open_abstracts)

**ABS
TRA
CTS**



Jason Priem #BLM
@jasonpriem

Replying to @aarontay

where to begin! Search/discovery tools, summarization, entity mining and graphing, uncovering research fronts (emerging and historical), coauthor discovery, automated hypothesis generation, automated lit reviews, teaching tools, argumentation/claim graphs, nanopub extraction...

4:33 AM · Sep 27, 2020 · TweetDeck

<https://i4oa.org/>

Interesting things I could not cover

- Developments in Open Data, Open Science
- Wikidata, Wikicite
- Linked data

Read more

- [A comparison of 6 Access Broker browser extensions Lean Library, Kopernio, Anywhere Access, Libkey Nomad & more](#)
- [List of Innovative Literature mapping tools](#)
- [The next generation discovery citation indexes – a review of the landscape in 2020](#)
- [The rise of new citation indexes and the impact on Science mapping tools - Citespace, VOSviewer, Citation Gecko and more](#)

Read more

- [The rise of open scholarly data and possible implications](#)
- [Why openly available abstracts are important – overview of the current state of affairs](#)
- [Cashing the cheque of open access or Machine learning and Scholarly tools – Meta, Scite, Paper Digest and more](#)

Thank you



<https://www.linkedin.com/in/aarontay/>



<https://twitter.com/aarontay>



<https://musingsaboutlibrarianship.blogspot.com/>



Aarontay@gmail.com