Open Access Publishing

Viplav Baxi Knimbus Digital Library Platform

Agenda

- My tryst with Open-ness
- Exploring Open Science
- Open Access / Publishing
- OA Challenges & Models
- Global Initiatives





'We must teach science in a more hands-on manner'

A professor in the department of chemistry, Delhi University, K V Sane has been instrumental in organising and directing a project on locally-produced low-cost equipment for chemical education that is sponsored by the International Union of Pure and Applied Chemistry (IUPAC) and UNESCO. The recipient of many prestigious awards, Sane has also been awarded UNESCO's Einstein Medal recently. S SANKARAPANDI interviews the man who is trying to bring about significant changes in

teaching methods:



(IUPAC CTC) (4), which has overwhelming evidence that severe economic constraints in many countries is discouraging practical work in science at every educational level and that these constraints are becoming acute. Laboratory funding is almost static, and basic chemical instrumentation is becoming

Development of low-cost, locally produced laboratory equipment: An international initiative

Pramod K. Srivastava, Kamalni Sane, Krishna V. Sane, and David J. Waddington

Cite this: J. Chem. Educ. 1985, 62, 5, 428
 Publication Date: May 1, 1985 ~
 https://doi.org/10.1021/ed062p428
 American Chemical Society and Division of Chemical Education, Inc.
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Worked in Open Science in the 90s...



Open Science Experiments

- Simulations as a way of teaching scientific and mathematical concepts like Speed and Calculus
- Web-like hypermedia applications
- Hardware simulations Titrations

Developed Open Science Software...



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Amazon							



Edmodo Knewton

Coursera, EdX, Udemy...

Instagram Byjus, Vedantu...

Tiktok 2010s

iPAD Chromebook Alexa NLP Raspberry Pi

Cloud computing

Artificial Intelligence

Big Data

Adaptive Learning 3D Printers Robotics, RPA IoT

Wearables

Kahoot

Google Apps

Blockchain

Education

Pokemon





WhatIfEDU

Open rather than closed systems Enabling Disruption World LABs MOOCs Inter-disciplinary curricula



Explored Openness as a value...



Integrated knowledge platform...



Curated Content Collections





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Connect | Learn | Share | Grow

Videos



Dr. Sunil MV, SDMIMD, Mysore -Importance of Library and...



Mr. Sree Kumar Nair, Christ University, Bangalore - Advice to...



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Building Open Communities...

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A comprehensive collection of content







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National Education Summit 2023

Explore 🔻

and the Role they Pla...

Exploring Open Science



What is Open Science?

Open Science is an opportunity to:

- Make science FAIR Findable, Accessible, Interoperable and Reusable
- Disseminate knowledge, methods, data, software, hardware widely without price or technical barriers
- Establish transparency that demonstrates integrity and builds trust, ensure reproduction





Open Data

- Open Data is a strategy for incorporating research data into the permanent scientific record by releasing it under an Open Access license. Includes Images, Raw data, Audio – all underpinning primary research. Should exclude PII.
- Use repositories such as http://figshare.com/,, https://datadryad.org/stash, https://datadryad.org/stash, https://datadryad.org/stash, https://data.mendeley.com/, http://dataverse.harvard.edu/, https://dataverse.harvard.edu/, https://datasets, <a href="https://dat
- Check if your publisher has an Open Data policy e.g. <u>https://journals.plos.org/plosone/s/data-availability</u>
- Why
 - For verification, replication, reuse, and enhanced understanding of research.
 - Data archival and accessibility
 - Linking of research data and their associated articles, enhancing visibility and ensuring recognition



https://plos.org/open-science/open-data/

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https://www.kaggle.com/





Who we are

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What we do Join us

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Trusted, simple, community driven

Photo by CDC on Unsplash

Dryad is a community-owned resource Learn about membership

Submit now

https://datadryad.org/stash



Open Methods

- Methods describe the processes, procedures and materials used in a research investigation.
- Includes experimental design, models, protocols, sample data, flowcharts etc.
- Why should methods be open?
 - Establishes Transparency
 - Deepens understanding and critical review
 - Ensures Reproducibility
 - Can be adapted and reused in different contexts



Poor computational reproducibility

- Economics Reinhart and Rogoff, two respected Harvard economists, reported in a 2010 paper that growth slows when a country's debt rises to more than 90% of GDP. Austerity backers in the UK and elsewhere invoked this many times. A postgrad failed to replicate the result, and Reinhart and Rogoff sent him their Excel file. They had unwittingly failed to select the entire list of countries as input to one of their formulas. Fixing this diminished the reported effect, and using a variant of the original method yielded the opposite result than that used to justify billions of dollars' worth of national budget decisions.
- A systematic study found that only about 55% of studies could be reproduced, and that's only counting studies for which the raw data were available (Vilhuber, 2018).

https://alexholcombe.wordpress.com/2023/08/08/an-executive-summary-of-sciences-replication-crisis/



nature > news feature > article

News Feature | Published: 25 May 2016

1,500 scientists lift the lid on reproducibility

<u>Monya Baker</u>

<u>Nature</u> **533**, 452–454 (2016) <u>Cite this article</u>

173k Accesses 2142 Citations 5177 Altmetric Metrics

This article has been <u>updated</u>

Survey sheds light on the 'crisis' rocking research.

More than 70% of researchers have tried and failed to reproduce another scientist's experiments, and more than half have failed to reproduce their own experiments. Those are some of the telling figures that emerged from *Nature*'s survey of 1,576 researchers who took a brief online questionnaire on reproducibility in research.

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





Harvard Business School Professor Francesca Gino Accused of Committing Data Fraud in at Least Four Papers



A group of three data investigators has accused Harvard Business School professor Francesca Gino of publishing fraudulent data in at least four papers. By Christopher Hidalgo

Uri Simonsohn, Leif D. Nelson, and Joseph P. Simmons who teach at University Ramon Llull in Barcelona, the University of California, Berkeley, and the University of Pennsylvania, respectively wrote on their data investigation blog Data Colada that they plan to detail multiple instances of academic misconduct by Gino in a four-part series.

https://www.thecrimson.com/article/2023/6/23/alleged-data-fraud-gino/



Open Code

- GitHub: social coding.
- Google Code: Home of Android, Google Web Toolkit, App Engine, and other projects.
- Sourceforge: open source repository.
- java.net: development projects related to Java technology.
- Freecode: Unix software directory.
- CPAN: Perl module directory
- Code and Documentation sharing Platforms like Jupyter, Colab
- Open Code Leading to LLMs being tuned for writing and debugging code



Open Source Al

- Grok-1 (Musk, xAI)
- LLaMA 2 (Meta)
- BLOOM
- BERT (Google)
- Falcon 180B
- Mistral Al

Open Content is a large and growing part of LLMs!



What type of information is used to teach ChatGPT?

As noted above, ChatGPT and our other services are developed using (1) information that is publicly available on the internet, (2) information that we license from third parties, and (3) information that our users or human trainers provide. This article focuses on the first set: information that is publicly available on the internet.

For this set of information, we only use publicly available information that is freely and openly available on the Internet – for example, we do not seek information behind paywalls or from the "dark web." We apply filters and remove information that we do not

https://help.openai.com/en/articles/7842364-how-chatgpt-and-our-language-models-are-developed

How LLM Training Works

Here are the general steps involved in training LLMs.

1. Data Collection (Preprocessing)

This initial step involves seeking out and compiling training dataset. Data can originate from diverse sources such as books, articles, web content, and open-access datasets. This data needs to be cleaned up and prepared for training. For example, the dataset might require conversion to lowercase, removal of stop words, and tokenization into token sequences.

https://www.run.ai/guides/machine-learning-engineering/Ilm-training

Training Datasets on HF

https://huggingface.co/datasets



```
🗋 parse_expenses.py 🗡
                                                                                           addresses.rb ×
                                                                                                               sentiments.ts ×
GITHUB COPILOT: CHAT
                                                                        import datetime
   monalisa
Write unit tests for this function
                                                                        def parse expenses (expenses string):
                                                                            """Parse the list of expenses and return the list of triples (date, amount, curren
                                                                            Ignore lines starting with #.
🔠 GitHub Copilot
                                                                            Parse the date using datetime.
                                                                            Example expenses_string:
                                                                                2023-01-02 -34.01 USD
  import unittest
                                                                                2023-01-03 2.59 DKK
  import datetime
                                                                                2023-01-03 -2.72 EUR
  class TestParseExpenses(unittest.TestCase):
      def test_parse_expenses_with_valid_input(self):
                                                                            expenses = []
          expenses string = '2023-01-02 -34.01 USD\n2023-01-
                                                                            for line in expenses_string.splitlines():
          expected_output = [(datetime.datetime(2023, 1, 2)
          self.assertEqual(parse_expenses(expenses_string),
                                                                                if line.startswith("#"):
                                                                                    continue
                                                                                date, value, currency = line.split (" ")
      def test_parse_expenses_with_empty_input(self):
                                                                                expenses.append((datetime.datetime.strptime (date, "%Y-%m-%d"),
          expenses string = ''
                                                                                                 float (value),
          expected_output = []
          self.assertEqual(parse_expenses(expenses_string),
                                                                                                 currency))
                                                                   21
                                                                                return expenses
  if __name__ == '__main__':
                                                                        expenses data = '''2023-01-02 -34.01 USD
      unittest.main()
                                                                                        2023-01-03 2.59 DKK
                                                                                        2023-01-03 -2.72 EUR'''
The code assumes that the datetime module is imported. The test
```

cases cover different scenarios such as valid input, empty input, input with comments, invalid date format, and invalid value format.



Large Language Model

Introducing Code Llama, a state-of-the-art large language model for coding

August 24, 2023





Devin: Al Software Engineer





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MJ



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A young boy with short hair, blue eyes and barefoot, dressed in the style of Viking and boots made of animal skin is sitting on the snow-covered ground near his tent holding an axe. The hyperrealistic details, fawncore, light gray and brown style inspired by viking designs, with vray tracing techniques.



ar 9:16 stylize 500

GFX Creation



https://www.midjourney.com/showcase

Video Generation

🕼 OpenAl

Research ~ API ~ ChatGPT ~ Safety Company ~

Creating video from text

Sora is an AI model that can create realistic and imaginative scenes from text instructions.

Read technical report

All videos on this page were generated directly by Sora without modification.

Capabilities Safety Research

https://openai.com/sora



II Pause

Try ChatGPT 7

Search Log in 7

Al for Open Science research

🕏 Elicit 🛛 🗉

Q Find papers

Intangible Valuation for companies using Market Capitalization method

- O Searching more than 125 million academic papers
- O Summarizing the first 4 abstracts
- Results

Summary of top 4 papers \vee

🗇 Сору

<u>Ewens (2019)</u> and <u>Piekkola (2016)</u> both explore the use of market prices in estimating intangible capital, with Ewens finding that exit prices provide more accurate estimates. <u>Andriessen (1999)</u> and <u>Sullivan (2000)</u> propose methods for valuing intangible assets, with Andriessen focusing on future earning potential and Sullivan discussing the value of intangible companies and suggesting non-traditional approaches to valuation. These studies collectively highlight the importance of considering intangible assets in company valuation and the potential of market-based methods in this process.



https://elicit.com/

Al for Open Science research

۽ 🍃	SCISPACE	Q Intangible Valuation for compar	ies using Market Capitalization X	:Q:	P	ricing 🗰 My Libra
 ▲ ▲ ■ ■	★ Insight from top 5 papers Intangible valuation for companies using the marelationship between intangible assets and companies using the marelation of internally created intangibles, maresults ^[2] . The most widely used approaches for own challenges and difficulties, such as defining in a precise and timely manner, particularly for Was this helpful?	arket capitalization method has been porate value, using the correlation be esulting in a downward bias of report r assessing intangibles are based on g excess returns, choosing discount r companies listed on the stock market p	a topic of interest in recent resear- tween accounting information and ted assets. However, estimating int market, income, or cost-related m- rates, and determining financial inc [5].	ch. Scholars have used tradition market value as a logical con cangible capital stocks using n etrics ^[3] . The income method, dicators ^[4] . The MV/BV metho	English onal econometric models t duction ^[1] . Current standa narket prices of intangibles cost method, and market d has been used to measu	(en) ▼ Save := o explore the rds prohibit the has shown promising method have their re intellectual capital
)≡ A ^Q	Add columns (6) v DF Ope Papers (20)	Access Top-tier papers Mo	re filters ights	TL:DR	Sort by: Relevance 🗸	± Export → ÷
© (3) (5) (5) (5) (5) (5) (5) (5) (5	 ∂ Open access • Journal Article • DOI Ø □ Applied Machine Learning Algorithms ○ Value Relevance 09 May 2023 • Highlights in Business, Econo ● PDF □ 99 ○ Ask Copilot 	for Intangible Asset asse proi mics and Management the value	paper discusses the relevance of ets to a company's market capitaliz fit, but if coes not pecifically ment market argitalization method for in lation.	intangible The auth ration and neural	The authors used machine learning methods (e.g., neural networks, decision trees) to explore the relationship between intangible assets and corpo- value and net profit, using the correlation between accounting information and market value as a logical conduction.	



https://typeset.io/

Open Educational Resources

- MIT Open Course Ware
- NPTEL, Swayam, NROER, ePathshala
- NDLI
- Saylor, Open Textbooks
- Free online courses for audit from major MOOC providers









Nano 33 BLE Rev2

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- Open Hardware kits for IoT, neuroscience and so many other fields
- Low cost and Green chemistry tools

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- Raspberry pi
- Arduino

Open Hardware



Open Access



The formal definitions

- OA was defined in three influential public statements:
 - the Budapest Open Access Initiative (February 2002),
 - the Bethesda Statement on Open Access Publishing (June 2003), and
 - the Berlin Declaration on Open Access to Knowledge in the Sciences and Humanities (October 2003)
- All three allow at least one limit on user freedom: an obligation to attribute the work to the author.

https://openaccesseks.mitpress.mit.edu/pub/6y6fc8k5/release/2?readingCollection=8a72a065



Budapest Statement

- There are many degrees and kinds of wider and easier access to [research] literature.
- By "open access" to this literature, we mean its free availability 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.
- The only constraint on reproduction and distribution, and the only role for copyright in this domain, should be to give authors control over the integrity of their work and the right to be properly acknowledged and cited.


Bethesda and Berlin statements

• For a work to be OA, the copyright holder must consent in advance to let users "copy, use, distribute, transmit and display the work publicly and to make and distribute derivative works, in any digital medium for any responsible purpose, subject to proper attribution of authorship."



Many concerted efforts around OA...

open access 2020

be informed take action collaborate learn n

BE INFORMED

OA2020 is a global initiative to propel open access forward by fostering and inciting the transformation of today's scholarly journals from the current subscription (paywall) system to new open access publishing models that enable unrestricted use and re-use of scholarly outputs and assure transparency and sustainability of publishing costs.

Even though Open Access is now a shared vision of the world's academic communities, research councils, and funding bodies, nearly 85% of the world's scholarly outputs are still locked behind paywalls, inhibiting the full impact of research and putting enormous strain on institutional budgets.

https://oa2020.org/be-informed/



Open Access Publishing

- Open Access (OA) publishing makes research accessible **immediately** upon publication with **no restrictions**.
- Anyone with internet access can find, read, mine, cite and share OA articles at no cost to them. Choosing to publish under an OA license advances information equity by making your research more visible, useful, and more transparent.
- Open Access returns us to the values of science: to help advance and improve society.



Digging Deeper into OA



Article Versions

- Author's Original Manuscript (AOM)/Preprint
 - Your paper before you submit it to a journal for peer review
- Accepted Manuscript (AM)
 - Your paper after peer review, when it has been revised and accepted for publication by the journal editor
- Version of Record (VoR)
 - The final, definitive, citable version of your paper, which has been copyedited, typeset, had metadata applied, and has been allocated a DOI (Digital Object Identifier)

https://authorservices.taylorandfrancis.com/wp-content/uploads/2020/08/Open-access-publishing-definitions.pdf



Embargo

- an embargo is a restriction on public access to an accepted manuscript either until or beyond the publication date.
- intentionally delayed access to papers published in journals to favour subscribers (who have paid to access the contents and enjoy instant access immediately upon publication) over non-subscribers who may be offered access to the same publication after a fixed period, usually ranging from three months to two years, depending on the journal.
- Two different types of embargoes can be required by publishers publication embargoes (until publication of the VoR (version of record) or beyond) and press embargoes (Press or news embargoes are restrictions for the benefit of press and media outlets).

https://www.cwauthors.com/article/dealing-with-the-embargo-period-as-an-author-and-a-reader https://libguides.reading.ac.uk/open-access/embargoes



Pre-prints and Post-prints

- A preprint is a version of a scientific manuscript posted on a public server prior to formal peer review. E.g. ArXiv.org or institutional repository
- A Post-print is author's final submission to the publisher post peer-review.
- Benefits
 - Rapid Dissemination of Results
 - Increased Attention
 - Career Advancement
 - Community Feedback
 - Inclusion
 - Unlimited and Timely Updates



Published Peer Review History

- Published Peer Review History collects the correspondence exchanged during the peer review process—including decision letters from each revision, complete with both editorial feedback and peer reviews, as well as the authors' responses to reviewers—and makes it available alongside a published research article.
- Many types including
 - publishing peer review content
 - open commenting from the wider community
 - open discussion between authors, editors and reviewers
 - open review before publication through preprints
 - post-publication commenting
 - sharing author or reviewer identities
 - decoupling the peer review process from the publication process



Open Access Publishing Types

Category	Preprint / Post Print	Publish	Access	
Diamond/ Platinum Open Access	Free, Open	Free, Open	Free, Open	
Gold	Subject to publisher embargoes	APC paid by individual, institution, consortium or under waivers	Free, Open	
Green (<u>https://chromewebstore.g</u> oogle.com/detail/unpaywa II/iplffkdpngmdjhlpjmppnc nlhomiipha)	After embargo or pursuant to state/country policies, can be pushed to website controlled by the author, by the research institutions that funded or hosted the work, or to a central open access repository (https://roarmap.eprints.org/, https://beta.sherpa.ac.uk/)	Paid	Paid	
Bronze			Free, no permission to reuse	
Black			Illegal open access	
Hybrid		Paid	Free if APC is paid	
<u>Transformative</u> (hybrid journals that will flip to OAe.g. Read and Publish)		Gradually increase the share of Open Access content	Offset subscription income from payments for publishing services (to avoid double payments). Plan S funding is not available post 2024.	

https://libraryguides.vu.edu.au/OpenAccess/OABasics

https://beta.sherpa.ac.uk/



Sherpa

https://beta.sherpa.ac.uk/

- Sherpa Romeo is an online resource that aggregates and analyses publisher open access policies from around the world and provides summaries of publisher copyright and open access archiving policies on a journal-by-journal basis.
- Sherpa Juliet is a searchable database and single focal point of up-todate information concerning funders' policies and their requirements on open access, publication and data archiving.
- Sherpa Fact provides clear guidance to researchers on whether a journal complies with a funder's open access policies.



Resources

- https://i4oa.org/ Initiative for Open Abstracts
- https://i4oc.org/ Initiative for Open Citations
- <u>https://cyber.harvard.edu/hoap/Open Access Tracking Project</u> Open Access Tracking Project (<u>https://tagteam.harvard.edu/remix/oatp/items</u>)
- DOAJ Directory of Open Access Journals
- <u>OpenDOAR</u>
- ROAR Registry of Open Access Repositories
- Open Access Theses and Dissertations
- Open Access Disciplinary Repositories



Open Access Publishing



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- Under a CC BY license, authors retain the copyright for their work while at the same time granting permission for anyone, anywhere in the world to read, share, reuse or remix the work for any purpose, as long as the original author is properly credited.
- 6 types of CC licenses

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How open is it?

Access	Reader Rights	Reuse Rights	Copyrights	Author Posting Rights	Automatic Posting	Machine Readability	Access
O D D D D D D D D	Free readership rights to all articles immediately upon publication	Generous reuse & remixing rights (e.g., CC BY license)	Author holds copyright with no restrictions	Author may post any version to any repository or website	Journals make copies of articles automatically available in trusted third-party repositories (e.g., PubMed Central) immediately upon publication	Article full text, metadata, citations, & data, including supplementary data, provided in community machine- readable standard formats through a community standard API or protocol	
	Free readership rights to all articles after an embargo of no more than 6 months	Reuse, remixing, & further building upon the work subject to certain restrictions & conditions (e.g., CC BY-NC & CC BY-SA licenses)	Author holds copyright, with some restrictions on author reuse of published version	Author may post final version of the peer-reviewed manuscript ("postprint") to any repository or website	Journals make copies of articles automatically available in trusted third-party repositories (e.g., PubMed Central) within 6 months	Article full text, metadata, citations, & data, including supplementary data, may be crawled or accessed through a community standard API or protocol	
	Free readership rights to all articles after an embargo greater than 6 months	Reuse (no remixing or further building upon the work) subject to certain restrictions and conditions (e.g., CC BY-ND license)	Publisher holds copyright, with some allowances for author and reader reuse of published version	Author may post final version of the peer-reviewed manuscript ("postprint") to certain repositories or websites	Journals make copies of articles automatically available in trusted third-party repositories (e.g., PubMed Central) within 12 months	Article full text, metadata, & citations may be crawled or accessed without special permission or registration	
	Free and immediate readership rights to some, but not all, articles (including "hybrid" models)		Publisher holds copyright, with some allowances for author reuse of published version	Author may post submitted version/draft of final work ("preprint") to certain repositories or websites		Article full text, metadata, & citations may be crawled or accessed with permission	
	Subscription, membership, pay-per-view, or other fees required to read all articles	No reuse rights beyond fair use/ limitations & exceptions to copyright (all rights reserved copyright) to read	Publisher holds copyright, with no author reuse of published version beyond fair use	Author may not deposit any versions to repositories or websites	No automatic posting in third-party repositories	Article full text & metadata not available in machine-readable format	

https://sparcopen.org/our-work/howopenisit/

"HowOpenIsIt? Open Access Spectrum", © 2012 SPARC and PLOS, Licensed under CC BY-NC-ND 3.0

Your Library. Anywhere. Anytime.

What OA is Not?

- OA isn't an attempt to bypass peer review.
- OA isn't an attempt to reform, violate, or abolish copyright.
- OA isn't an attempt to deprive royalty-earning authors of income.
- OA isn't an attempt to deny the reality of costs.
- OA isn't an attempt to reduce authors' rights over their work.
- OA isn't an attempt to reduce academic freedom.
- OA isn't an attempt to relax rules against plagiarism.
- OA isn't an attempt to punish or undermine conventional publishers.
- OA doesn't require boycotting any kind of literature or publisher.
- OA isn't primarily about bringing access to lay readers.
- Finally, OA isn't universal access.
 - Barriers: Filtering and censorship, Language, Handicap access, Connectivity, Technology barriers

https://openaccesseks.mitpress.mit.edu/pub/6y6fc8k5/release/2?readingCollection=8a72a065



OA Challenges



The Challenges



Large For-profit publishing sector that are gatekeepers

Source: Prof. Gautam Menon's presentation on OA and SDG at Ashoka University, March, 2024



The Challenges

- Out of the four million scientific papers that are published each year, some 61 per cent are still behind subscription paywalls. In the medical field, progress has been utterly slow.
- Only 31 per cent of all cancer-related publications are openly accessible. For cardiovascular diseases and respiratory diseases, these figures are respectively 20 and 16 per cent.
- And in the field of climate change, which is such a big challenge for our planet, only 40 per cent of all publications are in open access.

https://www.researchprofessionalnews.com/rr-news-europe-views-of-europe-2023-9-plan-s-stay-the-course/



Challenges

- Adverse Incentive structures
- Awareness of OA/OS and inadequate training of students
- Sharing mechanisms vs Competition
- Deficit of required institutional, funder or government interventions
- Researcher sentiments



Some possible solutions

- Support non-profits
- Give recognition for OA/OS practices
- Mandate Open-ness for research outputs that are publicly funded
- Mandate preprints/postprints
- Move to alternative, lower cost subscribe and publish OA models



OA Models

APC Breakdown Example - BMJ



N.B. All percentages are averaged across BMJ's portfolio of research journals

https://www.bmj.com/company/apc-breakdown/



OA Commercial Models

- Gold and Hybrid OA APC paid by author, the author's organization, or by the research funder
- Hybrid behind paywall, subscription + APC ("double-dipping")
- Institutional Fee flat annual fees based on past publishing record tiered framework – the more you publish the more your institution pays
- Read and Publish OA Bundled with subscription, no APC
- E.g PLOS. <u>https://plos.org/publish/fees/</u> Institutional partnerships, either through centralized annual payments, direct-billing or <u>Community Action</u> <u>Publishing</u> membership (recognizes contributions of all authors, not just the corresponding author) can eliminate the cost and management of publication fees for many PLOS authors.



OA Commercial Models

- Waivers and Assistance (Location, Funder requirements, Financial need etc)
- Other option: for nonprofit publishers to make a journal open access if enough institutions retain a subscription to the journal so the publisher has a stable funding mechanism. (<u>https://libguides.scu.edu/scholar-commons/typesofOA</u>)
- Note: 60% of the journals in The Directory of Open Access Journals (DOAJ) do not charge an APC. <u>https://guides.lib.odu.edu/openaccess/apc</u>



BMJ OA options



Read & Publish Agreements

Our tailored read and publish agreements are designed to support institutions transition to open access. These agreements remove the burden of publishing fees from individual authors, as well as providing read access to all existing and forthcoming BMJ journal content.



Prepay Account

This option is an advance payment system that allows institutions to deposit funds to cover the cost of open access publishing by their authors in any of BMJ's journals. The article processing charge (minus your discount) is deducted from the account balance on acceptance of the article.



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About Purpose-Led Publishing



SCIENCE IS OUR ONLY SHAREHOLDER



Purpose-Led Publishing is a coalition of three publishers in the field of physical sciences: AIP Publishing, the American Physical Society and IOP Publishing.

Together, as publishers that will always put purpose above profit, we have defined a set of industry standards that underpin high-quality, ethical scholarly communications.

We are proudly declaring that science is our only shareholder.

Invest 100% of our funds back into science

- Publish only the content that genuinely adds to scientific knowledge
- Ensure our terms are reasonable
- Put research integrity ahead of profit
- Admit our errors and set them right





Virginia's Academic Library Consortium

About VIVA - Collections - E-Resource Management - Resource Sharing - Open and Affordable Initiatives - News & Events -

VIVA Discounts on Article Publication Charges (APCs) for Open Access Journals

Publisher/Publication	Open Access Discount	Discount Based On	Qualifying VIVA Institutions	Notes
American Association for the Advancement of Science (AAAS)	Varies	The individual institution's subscription holdings	Public Institutions and Subscribing Private Institutions	To receive these savings, authors should submit their institution's AAAS number upon acceptance of their manuscript. The AAAS number and level of savings for VIVA institutions can be found here .
American Chemical Society (ACS)	100%	Institutions that participate in the VIVA ACS Read & Publish Agreement.	Please see the ACS Agreement page for a full list of participating institutions.	Authors are identified through affiliation as entered through the manuscript submission process.
Association for Computing Machinery	100%	Institutions that participate in the ACM VIVA Agreement	Please see the ACM Agreement page for a full list of participating institutions.	Authors are identified through their email domain, so they should use their institutional email addresses when submitting manuscripts.
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The ACM Open Model

- Variation on "Read + Publish" model that commercial publishers introduced:
 - Key difference is that ACM's model is "unlimited read + unlimited publish" compared to APC model from other publishers and societies
 - One invoice covers all fees for publishing and reading

10 Tier pricing model determined by average number of research articles from affiliated corresponding authors published over past 3 years:

- Pricing is decoupled from historic spend; entirely predicated on an institution's publishing
- Intention of the tiering model is to rebalance revenues
- ¹/₃ of institutions (Tiers 1-9) will pay more and ²/₃ (Tier 10) will pay the same (or less) over time



Global Initiatives in Open Access Publishing



Plan S, Horizon Europe - EU

- Horizon Europe EU's key funding programme for research and innovation with a budget of €95.5 billion <u>https://op.europa.eu/en/web/eu-law-and-publications/publication-detail/-</u> /publication/9570017e-cd82-11eb-ac72-01aa75ed71a1
- <u>Plan S https://www.coalition-s.org/why-plan-s/ https://www.coalition-s.org/organisations/</u>
 - On 4 September 2018, a group of national research funding organisations, with the support of the European Commission and the European Research Council (ERC), announced the launch of cOAlition S, an initiative to make full and immediate Open Access to research publications a reality.
 - "With effect from 2021*, all scholarly publications on the results from research funded by public or private grants provided by national, regional and international research councils and funding bodies, must be published in Open Access Journals, on Open Access Platforms, or made immediately available through Open Access Repositories without embargo."
 - Funding finishes in 2024
- Plan S Responsible Publishing vision Authors and not third-party suppliers, such as publishers

 should decide when and where to publish, including versions before and after peer review and the associated peer review reports. Service-related elements (copyediting, typesetting, submission systems, hosting, formal quality checks) can be outsourced. (Publishers as service providers, scholar in control)



Across the world

- Both of Australia's largest research funders, the Australian Research Council (ARC) and the National Health and Medical Research Council (NHMRC), now have open access policies in place.
- On 25 August 2022, when the White House Office of Science and Technology Policy (OSTP) issued a new open-access policy "make publications and research funded by taxpayers publicly accessible, without an embargo or cost. All agencies will fully implement updated policies, including ending the optional 12-month embargo, no later than December 31, 2025." <u>https://www.whitehouse.gov/ostp/news-updates/2022/08/25/ostp-issues-guidance-to-make-federally-funded-research-freely-available-without-delay/</u>
- Canada's main funding agencies, which currently have a 12-month embargo period, will require embargo-free Open Access publication by the end of 2025 <u>https://blog.mdpi.com/2023/10/18/open-access-around-the-world/</u>
- Japan However, by 2025, it will be required that articles resulting from nationally funded research in Japan must be made Open Access immediately on publication. <u>https://blog.mdpi.com/2024/02/27/open-access-in-japan/</u>
- India way to go still (<u>https://www.downtoearth.org.in/blog/science-technology/india-has-lost-its-way-on-open-access-90028</u>) but initiatives like ShodhGanga, NDLI etc. do exist. Also see <u>https://nap.nationalacademies.org/read/11030/chapter/35#155</u>



India

- Indian researchers shelled out US \$17 million in 2020 for OA out of \$30 mn globally. 81% of APCs went to commercial publishers such as MDPI, Springer-Nature, Elsevier and Frontier Media (<u>http://timesofindia.indiatimes.com/articleshow/105596898.cms</u>)
- Open Access Availability of India's Scientific Research Funded by National and International Agencies
- In 2021, of the more than 2.47 million research papers added to a database known as the Web of Science, half of them were free to read, or open access (OA). The share of open access papers is increasing at a decent pace: 29.5 per cent in 2011; 36.6 per cent in 2015; and 50.2 per cent in 2021.
- India, with 121,494 papers (or 4.9 per cent of the world's research output), stood fifth in the number of papers published, behind China, the United States, the United Kingdom, and Germany. Less than one third of Indian papers are free to read. In contrast, in 2021, most papers from the Netherlands (83.43 per cent), UK (75 per cent), France (69 per cent), and Germany (68.8 per cent) are open access.

https://codeblue.galencentre.org/2023/01/26/indias-fumbled-chance-for-sharing-knowledge/



India - Policy

- The Indian government initiated a new science, technology and innovation policy in January 2020. The draft policy, released in December 2020, enshrined open science in chapter one.
- Its three key features were to set up an Indian Science and Technology Archive of Research (INDSTA), a dedicated portal to provide access to the findings of all publicly funded research; to place the full text of scientific papers immediately upon acceptance into a journal in a publicly available repository or INDSTA; and to make all data from publicly funded research available to everyone.
- But the policy is not yet in place.

https://codeblue.galencentre.org/2023/01/26/indias-fumbled-chance-for-sharing-knowledge/



India Analysis

• ROARMAP -18 funders and academic and research organizations in India have adopted OA mandates and policies





India Contribution to OA

- A total of 326 OA journals from India are listed in DOAJ as of 16 June 2022. Of the 484 Indian journals indexed in the Scopus database, 202 (42 %) journals are OA. Of the 224 Indian journals indexed in the WoS database, 129 (57 %) journals are OA
- A total of 22,17,537 papers were communicated to Scopus-indexed journals by Indian authors. Out of that 501744 (22.62 %), research articles are OA, while 12,46,576 research papers contributed by Indian authors were published in WoS- indexed journals and Out of that, 278013 (22.30 %) are OA.
- Open Access Publishing and its Academic, Economic, and Societal Impact: An Indian Perspective



In Summary
66 ... the dismantling of long-standing practices in order to make way for innovation, most often used to describe disruptive technologies such as the railroads or, in our own time, the **internet**.

- Schumpeter, Creative Destruction



Open Access

- an engine of Creative Destruction
- a mindset, a plan of action and a process
- an **inseparable** part of Open Science, making its vision possible
- an **imperative** for us to follow

Let us pledge today to go Open!

