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Apr 24th, 9:15 AM - 10:00 AM

## Opening Keynote: Working Together to Build and Sustain a Global Knowledge Commons

Kathleen Shearer

*Confederation of Open Access Repositories (COAR)*

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Shearer, Kathleen, "Opening Keynote: Working Together to Build and Sustain a Global Knowledge Commons" (2018). *Digital Initiatives Symposium*. 22.

<https://digital.sandiego.edu/symposium/2018/2018/22>

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## Opening Keynote: Working Together to Build and Sustain a Global Knowledge Commons

### Presenter 1 Title

Executive Director, COAR

### Session Type

Keynote Address

### Abstract

The widespread deployment of repository systems in higher education and research institutions provides the foundation for a distributed, globally networked infrastructure for scholarly communication. However, repository platforms are still using technologies and protocols designed almost twenty years ago, before the boom of the Web and the dominance of Google, social networking, semantic web and ubiquitous mobile devices. This is, in large part, why repositories have not fully realized their potential and function mainly as passive recipients of the final versions of their users' conventionally published research outputs. In order to leverage the value of the repository network, we need to equip it with a wider array of roles and functionalities, which can be enabled through new levels of web-centric interoperability.

In November 2017, COAR published the recommendations for the next generation of repositories. The vision for this work is "to position repositories as the foundation for a distributed, globally networked infrastructure for scholarly communication, on top of which layers of value added services will be deployed, thereby transforming the system, making it more research-centric, open to and supportive of innovation, while also collectively managed by the scholarly community."

In this presentation, Kathleen Shearer will present the current international context for scholarly communication, outline her vision for a more sustainable and equitable system for scholarly communication, present the recommendations of the COAR Next Generation Repositories Report, and discuss the key issues and challenges involved with moving forward.

### Location

KIPJ Theatre

### Comments

**Kathleen Shearer** is the Executive Director of COAR (Confederation of Open Access Repositories), an international association of repository initiatives with a membership of over 120 institutions worldwide from 36 countries on 6 continents. COAR's aim is to enhance the visibility and application of research outputs through a global network of open access repositories based on international collaboration and interoperability. Shearer has been working in the area of open access, open science, scholarly communications, and research data management for over 15 years. She has been the Executive Director of COAR since 2015, and participates in numerous other organizations in Canada and internationally. She has been an active member of the Research Data Alliance (RDA) and has acted as co-chair of two RDA Interest Groups, "Libraries for Research Data" and "Long Tail of Research Data". Shearer was instrumental in launching the Portage Initiative in Canada, a library-based research data management network. She is a research associate with the Canadian Association of Research Libraries (CARL) and a strategic consultant with the US-based Association of Research Libraries (ARL). Shearer also sits on the CASRAI Executive Board.

# Open is not enough!

Sustainability, equality, and innovation in scholarly communication



**DIGITAL INITIATIVES SYMPOSIUM**



## Who is COAR?

- Over 100 members and partners from 35 countries in 5 continents
- Universities, libraries, government agencies, open access organizations, not-for-profit organizations, and platform developers
- Diverse perspectives that share a common vision

## Major Activities

**International voice**  
Raising the visibility of repository networks as key infrastructure for open science

**Alignment and interoperability**  
Building a global knowledge commons through harmonization of standards and practices

**Cultivating relationships**  
Supporting an international community of practice for repositories and open access

**Building capacity**  
Advancing skills and competencies for repository and research data management

**Adopting value-added services**  
Promoting the use of web-friendly technologies and new functionalities for repositories

## Contacts Us

[http:// www.coar-repositories.org](http://www.coar-repositories.org)  
Email: [office@coar-repositories.org](mailto:office@coar-repositories.org)  
Phone: + 49 551 39 22215  
Fax: + 49 551 39 5222  
Facebook: COAReV  
Twitter: @COAR\_eV

## How to participate?

- Organizations can join COAR for €500 Euros per year (about \$600 US)
- Join as a single, consortial, or special member or partner
- Download the membership application (<https://www.coar-repositories.org/about/join/become-a-member>)

# Education, research, and knowledge are critical for sustainable development



But our system for sharing and disseminating knowledge must also be sustainable



# (1) Sustainability

“Implies a holistic approach to addressing problems that takes into account multiple dimensions including ecology, society and economics, recognizing that all of these dimensions must be considered together to find lasting prosperity.”



The ridiculous \$\$\$\$ for  
scholarly journals

# International Journals ☹️

TABLE 1: AVERAGE 2017 PRICE FOR SCIENTIFIC DISCIPLINES

DISCIPLINE	AVERAGE PRICE PER TITLE	DISCIPLINE	AVERAGE PRICE PER TITLE
Chemistry	\$4,773	Botany	\$2,053
Physics	4,369	Zoology	1,988
Engineering	3,408	Math & Computer Science	1,971
Biology	2,917	Geography	1,742
Food Science	2,567	Health Sciences	1,736
Geology	2,381	Agriculture	1,666
Technology	2,234	General Science	1,556
Astronomy	2,071		

SOURCE: LJ PERIODICALS PRICE SURVEY 2017



## Global results of the analysis

	Out of 50,000 journals
Used journals	16,816
Cited journals	9,075
Journals mentioned by our community in the survey	8,060
<b>subtotal</b>	<b>26,843 unique titles used/cited/mentioned</b>
«essential titles» (80%)	4,852
Additional titles (from validation by departments)	1,041
<b>subtotal</b>	<b>5,893 unique essential titles</b>
<b>2,940 titles with quantitative approach</b>	<b>2,953 titles from community consultation</b>

# Costs of Article Processing Charges

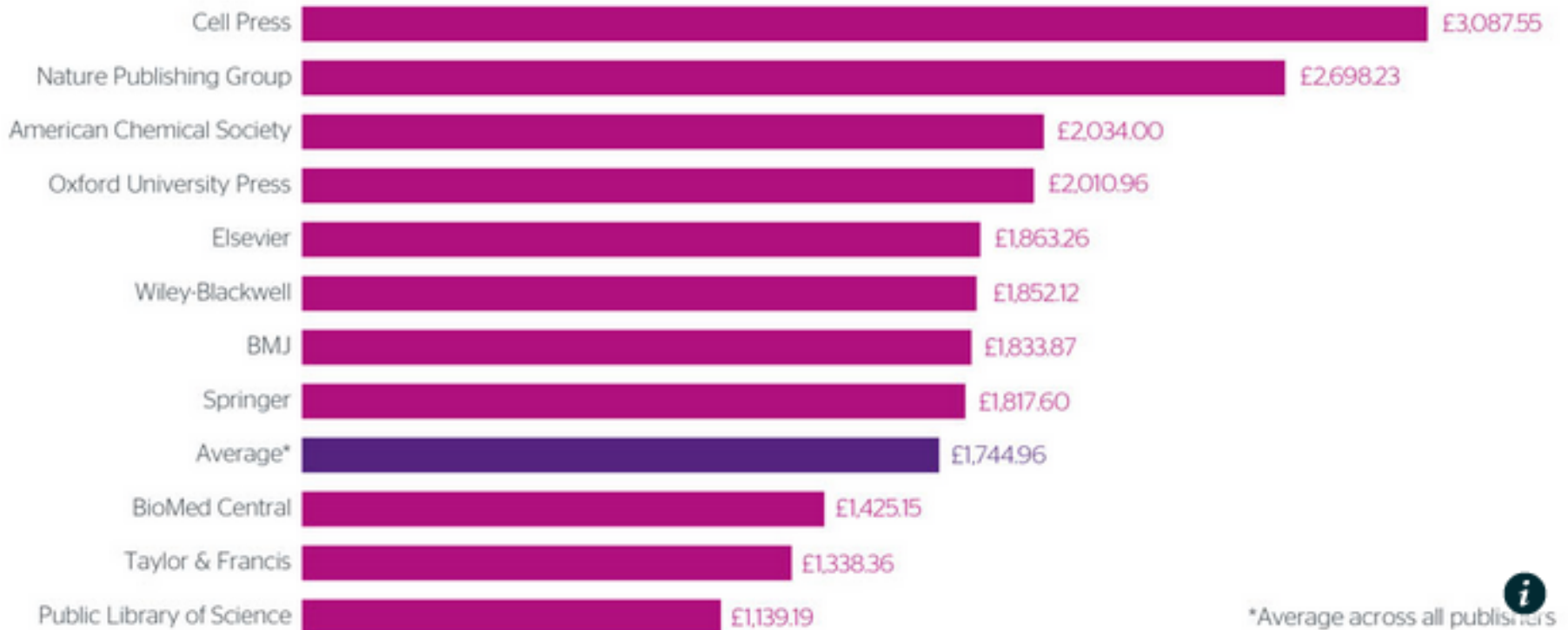


Figure 9: Average APC

Jisc 2016: Average APC cost was about £1745 (~\$2400 US)

# Consortial flipping

open access  
2020

be informed take action collaborate learn more events news



TODAY'S SCHOLARLY JOURNALS  
OPEN, RE-USABLE, SUSTAINABLE

## about DEAL

languages



## Elsevier

Renowned scientists resign from editorial activities for Elsevier and support the aims of project DEAL. Further information can be found in the [HRK press release](#) and [here](#).

A current list of institutions that have cancelled their contracts with Elsevier can be found [here](#).

## Project aim

The goal of Project DEAL is to conclude **nationwide licensing agreements** for the entire portfolio of electronic journals (E-journals) from major academic publishers from the 2017 licence year. The intention is also to bring about **significant change** to the status quo in relation to negotiations, **content** and **pricing** in the process. The effects of a consortium agreement at the national level should relieve the financial burden on individual institutions and bring wide-scale, lasting improvements in access to scholarly literature for academics. An open access component is also planned.

# Published on May 9, 2016



United Nations  
Educational, Scientific and  
Cultural Organization



## **Joint COAR-UNESCO Statement on Open Access**

Open access is a global trend, with policies and practices rapidly being adopted around the world. As the world enters a new era of sustainable development, openness and inclusiveness in scientific research will become increasingly critical. While most governments agree on the underlying principles of open access, there is significant diversity in the way countries have approached its implementation. These differences reflect a range of perspectives, values, and priorities of the different regions. Clearly, there is no "one-size-fits-all" solution to implementing open access.

## (2) Equality

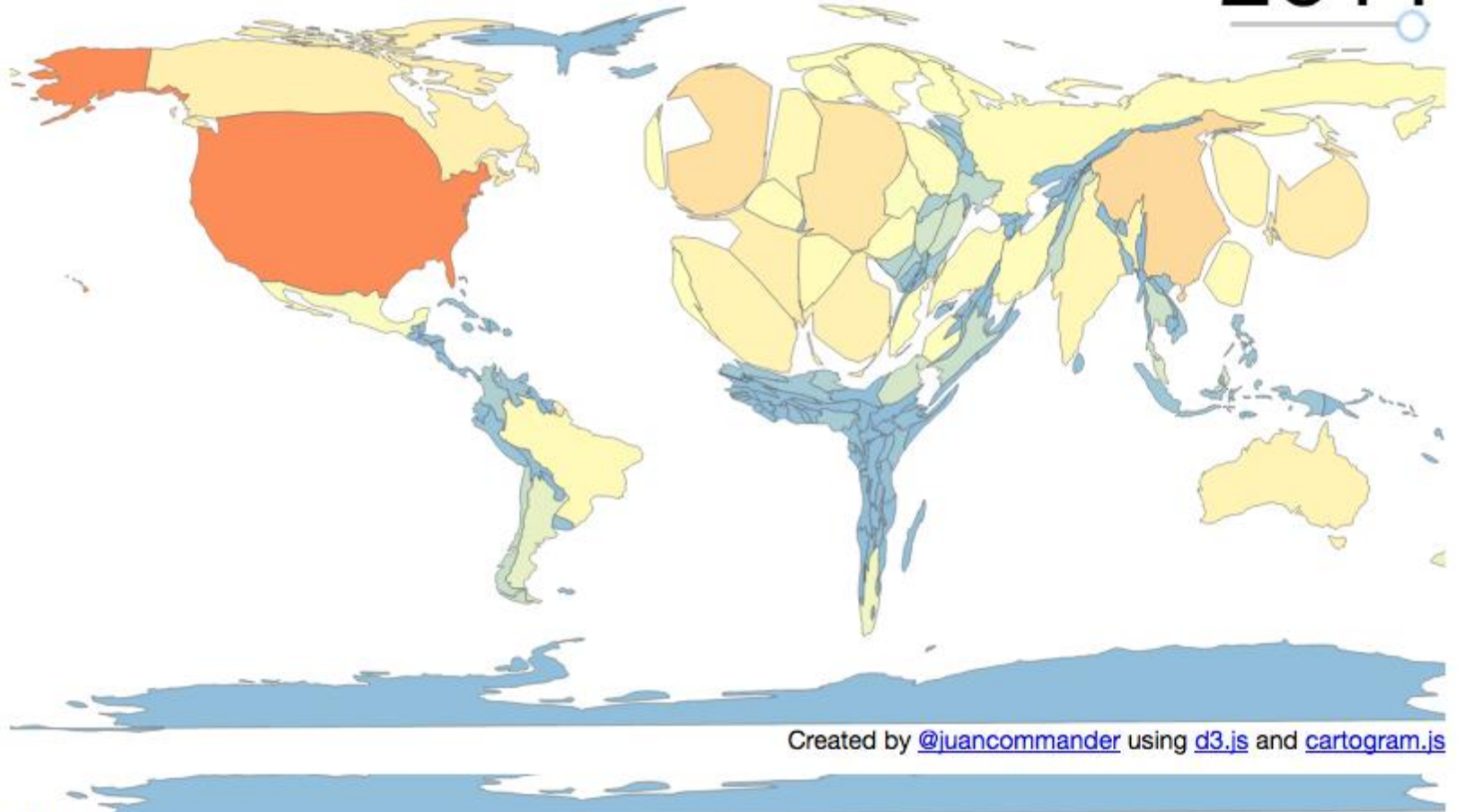
### **What is equality?**

“Equality is ensuring individuals or groups of individuals are not treated differently or less favourably , on the basis of their specific protected characteristic, including areas of race, gender, disability, religion or belief, sexual orientation and age.” (University of Edinburgh)



# World scaled by number of documents in Web of Science by Authors Living There

2011



Created by [@juancommander](#) using [d3.js](#) and [cartogram.js](#)


About

Juan Pablo Alperin: <http://jalperin.github.io/d3-cartogram/>



# Example: Chagas Disease



 OPEN ACCESS

VIEWPOINTS

## Ten years of Chagas disease research: Looking back to achievements, looking ahead to challenges

Eric Dumonteil , Claudia Herrera

Published: April 20, 2017 • <https://doi.org/10.1371/journal.pntd.0005422>

18  
Save

3  
Citation

2,299  
View

8  
Share

Article


Authors

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# Example: Nepal

## Nepalese research outputs - with Major Clusters

Number of publications: 3,011

Years: 2004-2013

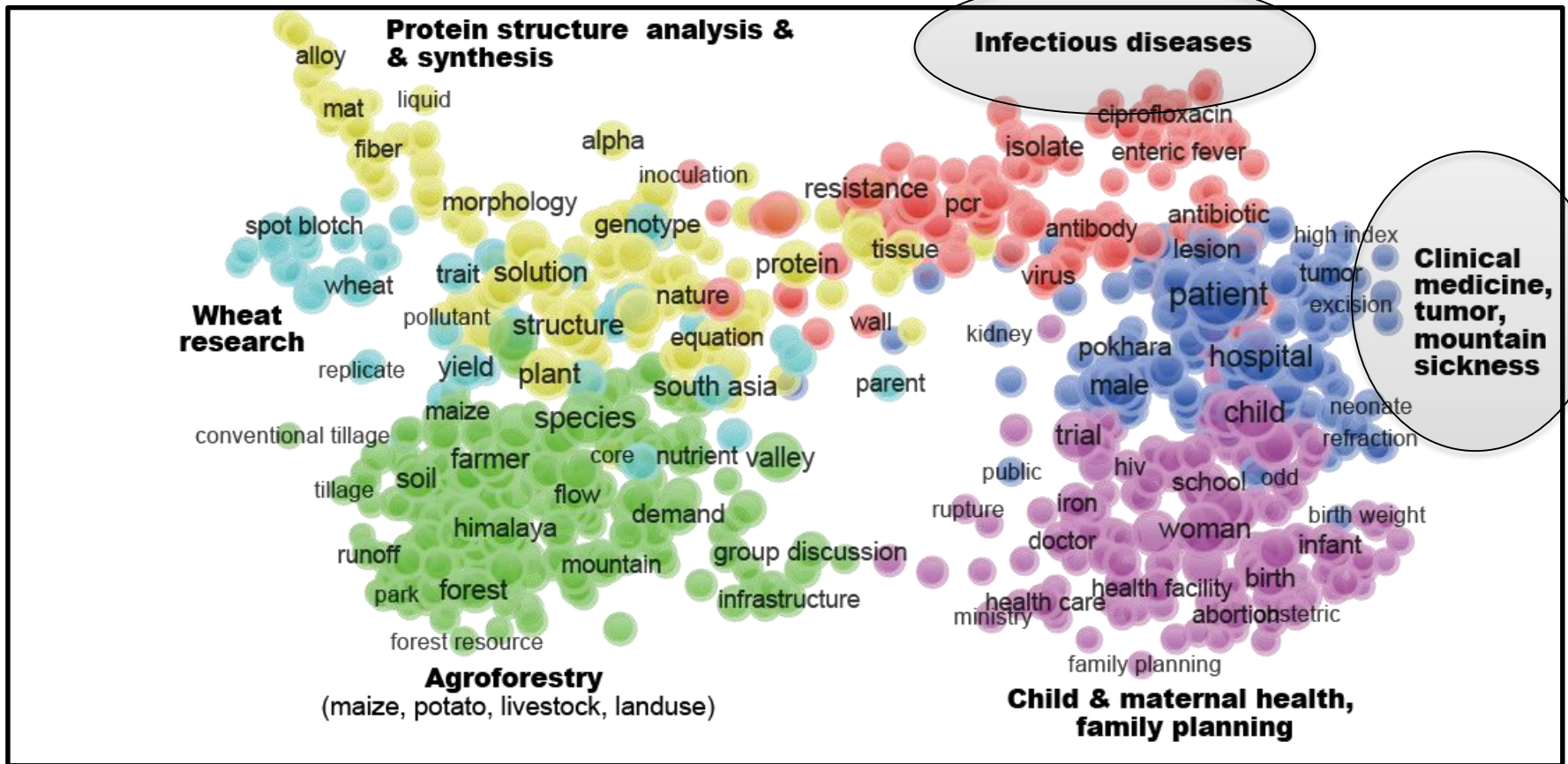


Image produced by Pitambar Gautam, Hokkaido University, Sapporo, Japan

Word maps created using VosViewer, a free software (Leiden University), Vaby Eck & Waltman (2010)

# The Rise of Big Publishers in Development and What is at Stake: A Development Perspective

*By: Denisse Albornoz, Research Associate at [OCSDNet](#)*

This assumption also denies the lack of diversity in international research. When researchers gain access to the international scientific journals, they are not gaining access to a repository of knowledge that is representative of the plurality and diversity of knowledge and science produced around the world. Rather, they are dealt with articles that **do not include Global South perspectives, giving more visibility and thus legitimacy to knowledge from the Global North.** This again reaffirms the idea that the Western-centric mode of producing science is the model local research needs to follow in order to reach its potential, a rationale that has strong cultural and social implications for what researchers and the general public understand as valid and legitimate knowledge.

# Canadian Journal Of Native Studies

The *Canadian Journal of Native Studies* is a highly recognized journal in the field of Native Studies. It began as a publication of the Society for the Advancement of Native Studies which is no longer in operation and whose founder; Sam Corrigan; was the Chief Editor from 1981-2008. It comes out on a bi-annual basis, and publishes original research which is refereed by peer review.



As a general focus, the journal publishes anthropological, historical, sociological, political, legal, education and cultural issues affecting First Nations people. Although the majority of articles deal with Indigenous peoples in Canada, it also publishes articles dealing with Indigenous peoples world-wide.





Leslie Chan

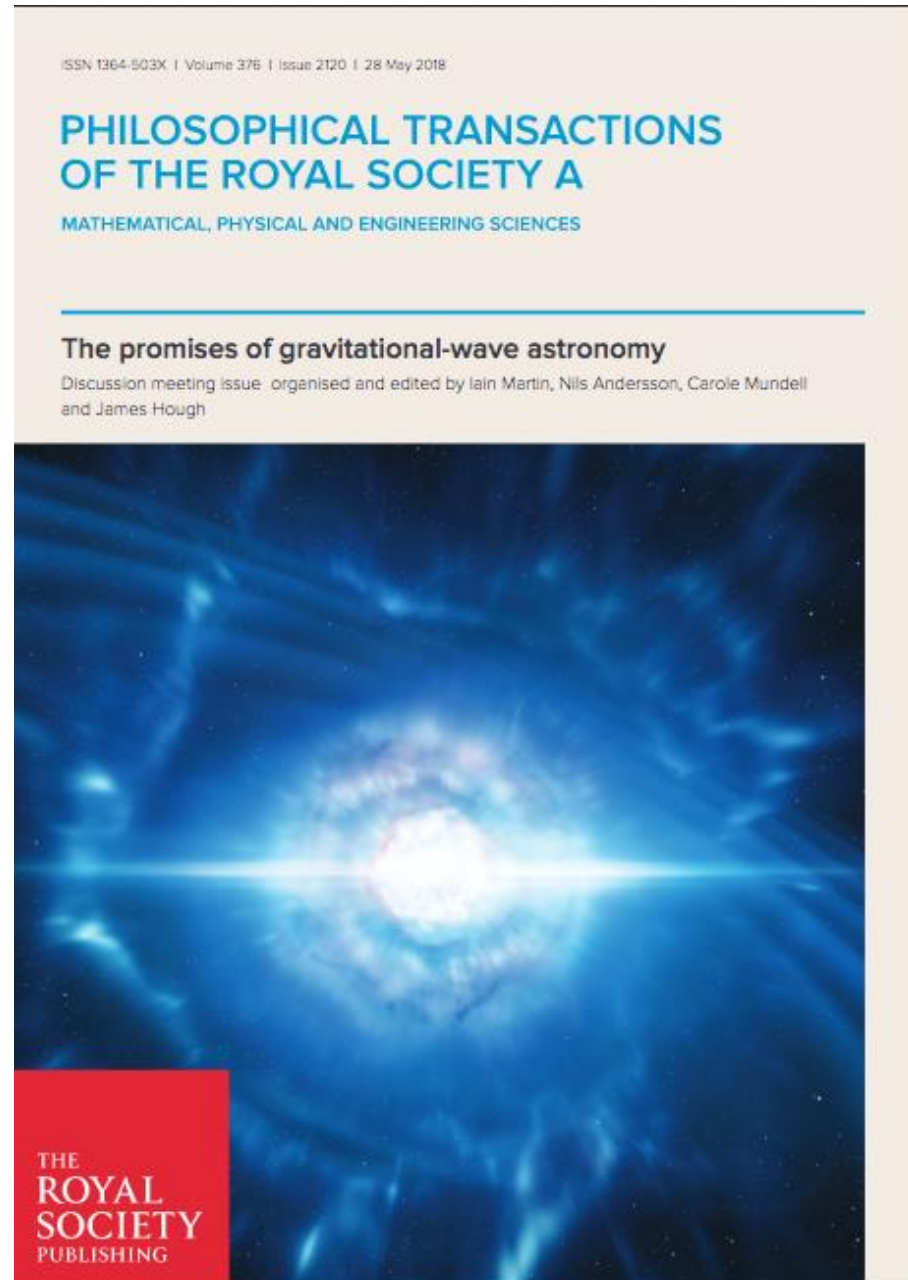
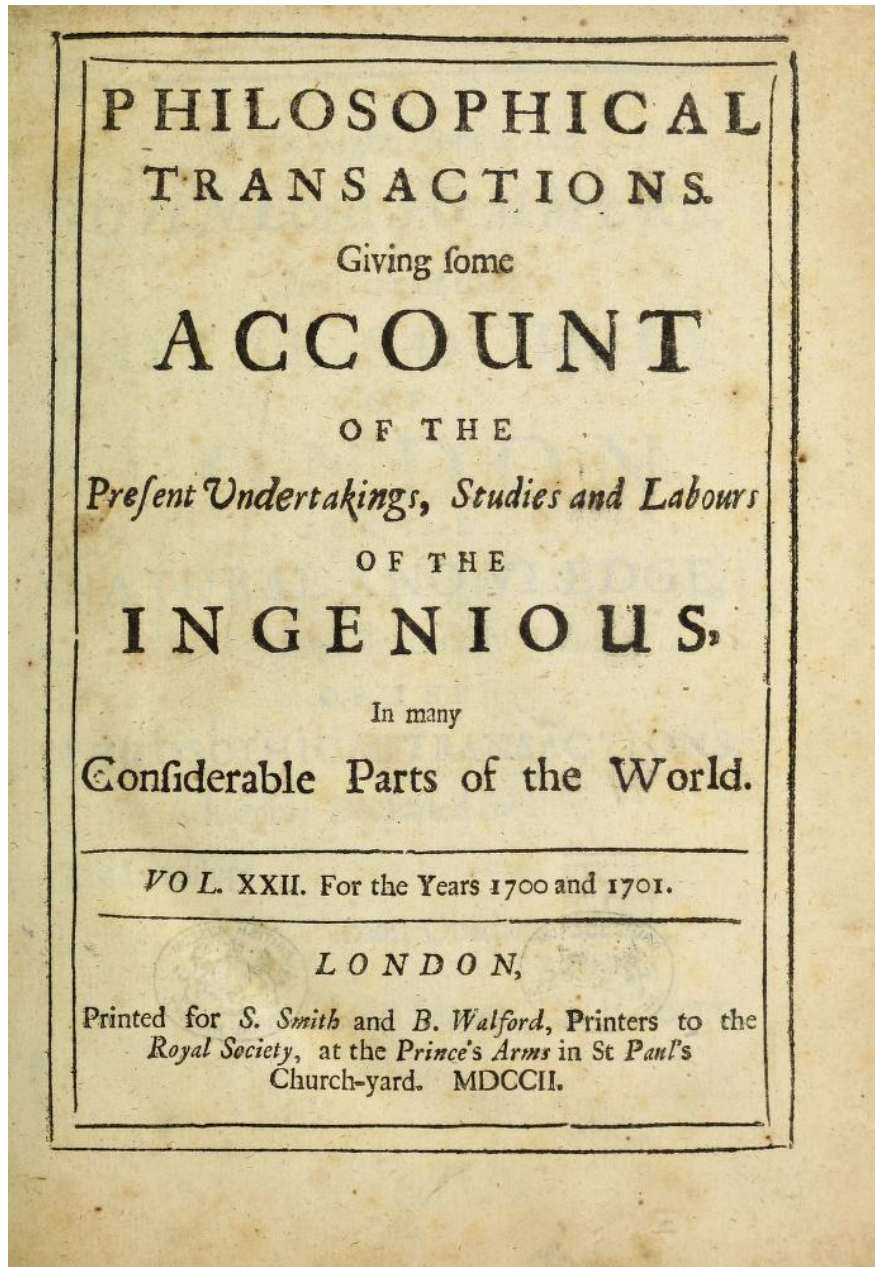
“Openness is not simply about gaining access to knowledge, but about the right to participate in the knowledge production process, driven by issues that are of local relevance, rather than research agendas set elsewhere or from the top down”

# (3) Innovation

The application of better solutions that meet new requirements, unarticulated needs, or existing market needs



# 350 years of the academic journal!





# 350 years of the journal, despite...

## Does peer review do more harm than good?

Peer review may be a central tenet of academic life, but Luc Rinaldi explains why it's being compromised by profit-driven predators

Luc Rinaldi  
May 9, 2015



MAY 22 2013  
5 COMMENTS

## IMPACT FACTORS: A BROKEN SYSTEM

BY CDLUC3  
ALTMETRICS, DATA  
PUBLICATION

If you are a researcher, you are very familiar with the concept of a journal's Impact Factor (IF). Basically, it's a way to grade journal quality. [From Wikipedia:](#)



How big is your impact? Sedan Plowshare Crater, 1962. From Flickr by The Official CTBTO Photostream

The impact factor (IF) of an academic journal is a measure reflecting the average number of citations to recent articles published in the journal. It is frequently used as a proxy for the relative importance of a journal within its field, with journals with

## Should I publish negative results or does this ruin my career in science?

by sven | Dec 13, 2016

Young scientists often produce negative results. All experiments were done correctly – but there was no difference between test and control. They get conflicting advice from supervisors and ethicists. Some say that publishing negative results is a waste of resources and ruins their careers. Others say that 'not publishing negative results is unethical' and promotes the reproducibility crisis. What should young scientists do in such a situation?



Save to my library

Add a comment



Do you want this article as a PDF file? Click [here](#).

## Publication and reporting biases and how they impact publication of research

By [Velany Rodrigues](#) | October 29, 2013  
Under [Publication Buzzwords](#) | 21,620 Views  
3.4 Average: 3.4



“In a desert prison, an older prisoner befriends a new arrival. The prisoner talks constantly about escape, spinning plan after plan. One day, he makes a break. He's gone a week; then the guards drag him half dead, crazy with hunger and thirst. He wails how awful it was over: endless stretches of sand, no oasis, failure at every turn. The older prisoner then says, 'Yep. I know. I tried those escape plans myself. The young prisoner says, 'You did? Why didn't you tell me?' The older prisoner shrugs: 'So who publishes negative results?'”

## Retraction Watch

Tracking retractions as a window into the scientific process

### Can journals get hijacked? Apparently, yes

without comments

Did you recently log onto your favorite journal's website and see [this](#)? (For anyone who doesn't want to bother clicking, it's the video from Rick Astley's "Never Gonna Give You Up.") If so, your favorite journal was hijacked.

In today's issue of *Science*, John Bohannon (who recently [published a bogus study about the benefits of chocolate](#)) explains how easy it is to take over a journal's website — so easy, in fact, that he did it himself. And he's not the only one, he reports: [Read the rest of this entry](#)

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Pages

[How you can support Retraction Watch](#)

[Meet the Retraction Watch staff](#)

[About Adam Marcus](#)

[About Ivan Oransky](#)

[The Center For Scientific Integrity](#)

[Board of Directors](#)

Written by Alison McCook

Posted in [AAAS.computer.science.science \(journal\)](#)

# Timothy Gowers “perverse incentives”



2016  
JOURNAL  
CITATION  
REPORTS  
THOMSON  
REUTERS



ELSEVIER

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

ScienceDirect

journal homepage: [www.aidm-online.com](http://www.aidm-online.com)



REVIEW ARTICLE

## How to publish a scientific manuscript in a high-impact journal

Emad M. El-Omar\*



## 10 simple strategies to increase the impact factor of your publication

by sven | Mar 5, 2015 | |

Impact factors are heavily criticized as measures of scientific quality. However, they still dominate every discussion about scientific excellence. They are still used to select candidates for positions as PhD student, postdoc and academic staff, to promote professors and to select grant proposals for funding. As a consequence, researchers tend to adapt their publication strategy to avoid negative impact on their careers. Until alternative methods to measure excellence are established, young researchers have to learn the “rules of the game”.



Peer review and scientific publishing

# Nobel winner declares boycott of top science journals

Randy Schekman says his lab will no longer send papers to Nature, Cell and Science as they distort scientific process

Ian Sample, science correspondent

@iansample

Monday 9 December 2013 19.42 GMT



Share Comments



“The pressure to publish in "luxury" journals encourages researchers to cut corners and pursue trendy fields of science instead of doing more important work.”

(Randy Schekman, University of California, Berkeley )

# The way we assess research contributions is too heavily dependent on publishing in the international journals



<http://www.shanghairanking.com/>

**ARWU is an influential ranking list of world universities compiled by Shanghai Jiao Tong University (SJTU).**

Each year, the top 500 universities in the world are ranked based on a set of criteria:

Criteria	Indicator	Weight
Quality of Education	Alumni of an institution winning Nobel Prizes and Fields Medals	10%
Quality of Faculty	Staff of an institution winning Nobel Prizes and Fields Medals	20%
	Highly cited researchers in 21 broad subject categories	20%
Research Output	Papers published in Nature and Science (not for institutions specialized in humanities and social sciences)	20%
	Papers indexed in Science Citation Index-expanded and Social Science Citation Index	20%
Per Capita Performance	Per capita academic performance of an institution	10%
Total	-	100%

From ARWU website: <http://www.shanghairanking.com/ARWU-Methodology-2017.html>

# The case of Chil 



- Researchers that publish in a Scielo journal, get **6 points** towards promotion and tenure
- Researchers that publish in an “international journal” get **10 points** towards promotion and tenure

**SCIELO** *Chile*





# The top five most prolific publishers account for more than 50% of all papers published in 2013.

Vincent Larivière , Stéphanie Haustein, Philippe Mongeon

Published: June 10, 2015 • <https://doi.org/10.1371/journal.pone.0127502>

Article	Authors	Metrics	Comments	Related Content
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- Abstract
- Introduction
- Methods
- Results
- Discussion and Conclusion
- Acknowledgments
- Author Contributions
- References

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- Reader Comments (4)
- Media Coverage (10)

## Abstract

The consolidation of the scientific publishing industry has been the topic of much debate within and outside the scientific community, especially in relation to major publishers' high profit margins. However, the share of scientific output published in the journals of these major publishers, as well as its evolution over time and across various disciplines, has not yet been analyzed. This paper provides such analysis, based on 45 million documents indexed in the Web of Science over the period 1973-2013. It shows that in both natural and medical sciences (NMS) and social sciences and humanities (SSH), Reed-Elsevier, Wiley-Blackwell, Springer, and Taylor & Francis increased their share of the published output, especially since the advent of the digital era (mid-1990s). Combined, the top five most prolific publishers account for more than 50% of all papers published in 2013. Disciplines of the social sciences have the highest level of concentration (70% of papers from the top five publishers), while the humanities have remained relatively independent (20% from top five publishers). NMS disciplines are in



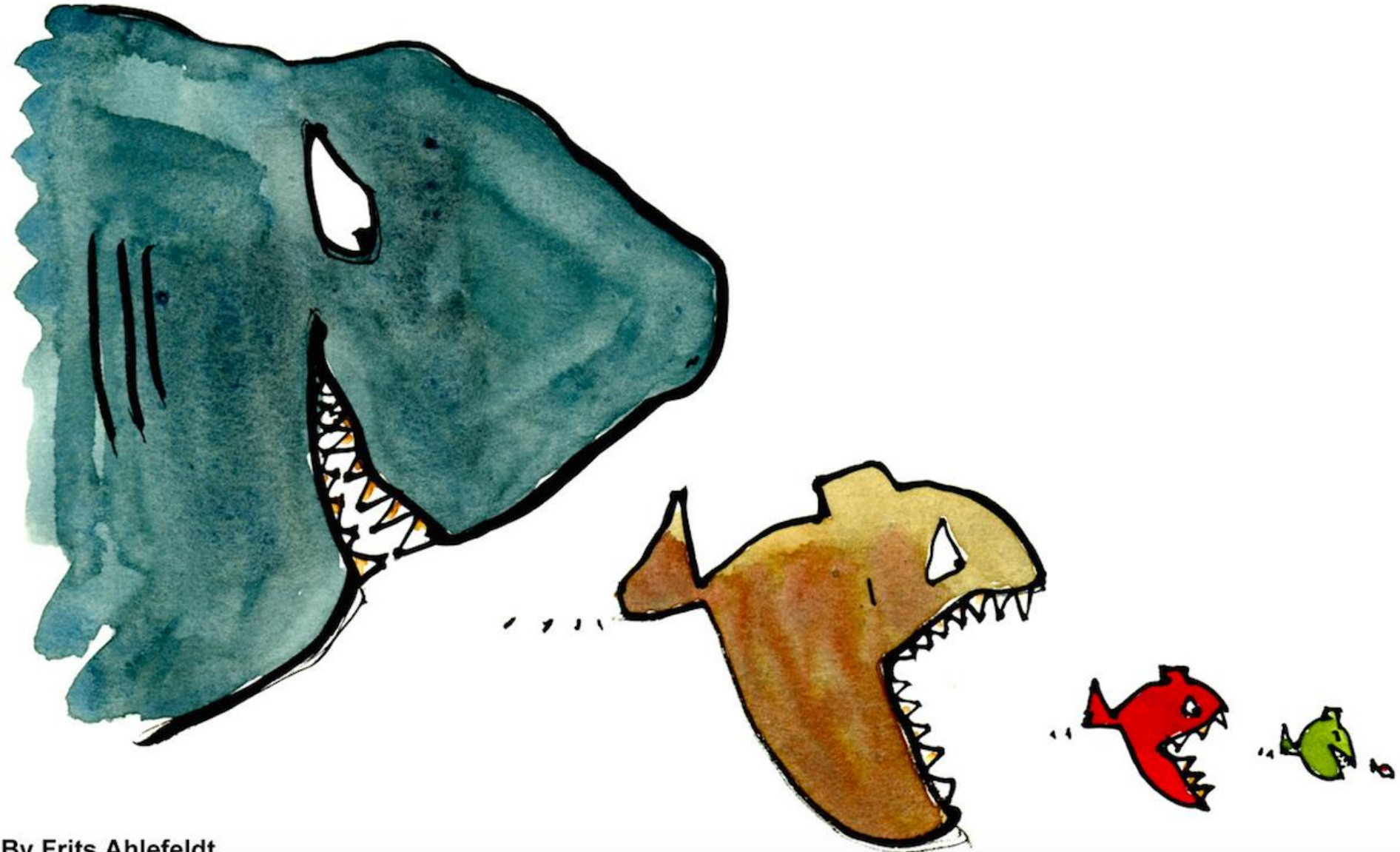


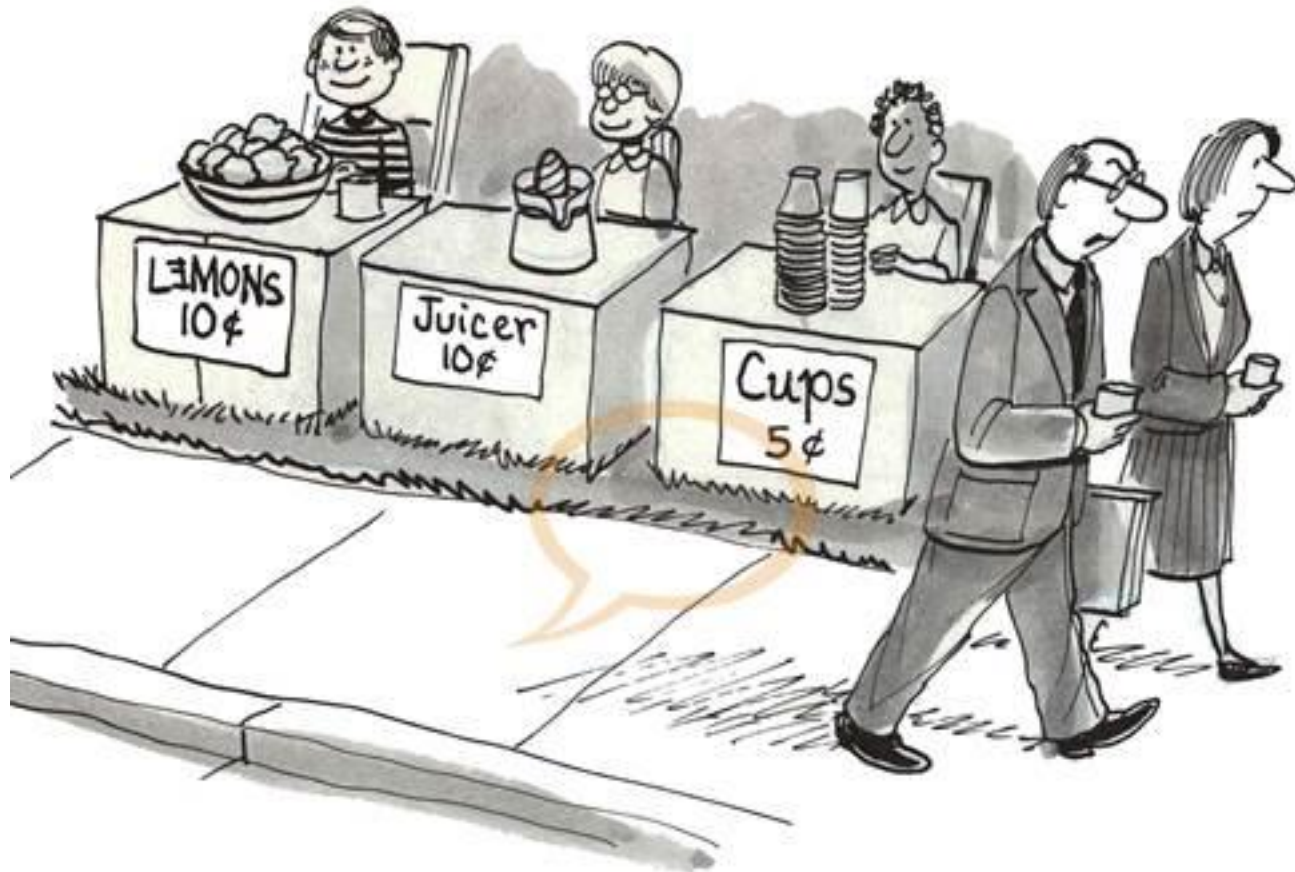
The long read

Is the staggeringly profitable  
business of scientific  
publishing bad for science?

**YES!**

# Increasing horizontal and vertical integration





“Just when I thought we might become competitive they launch this vertical integration strategy.”

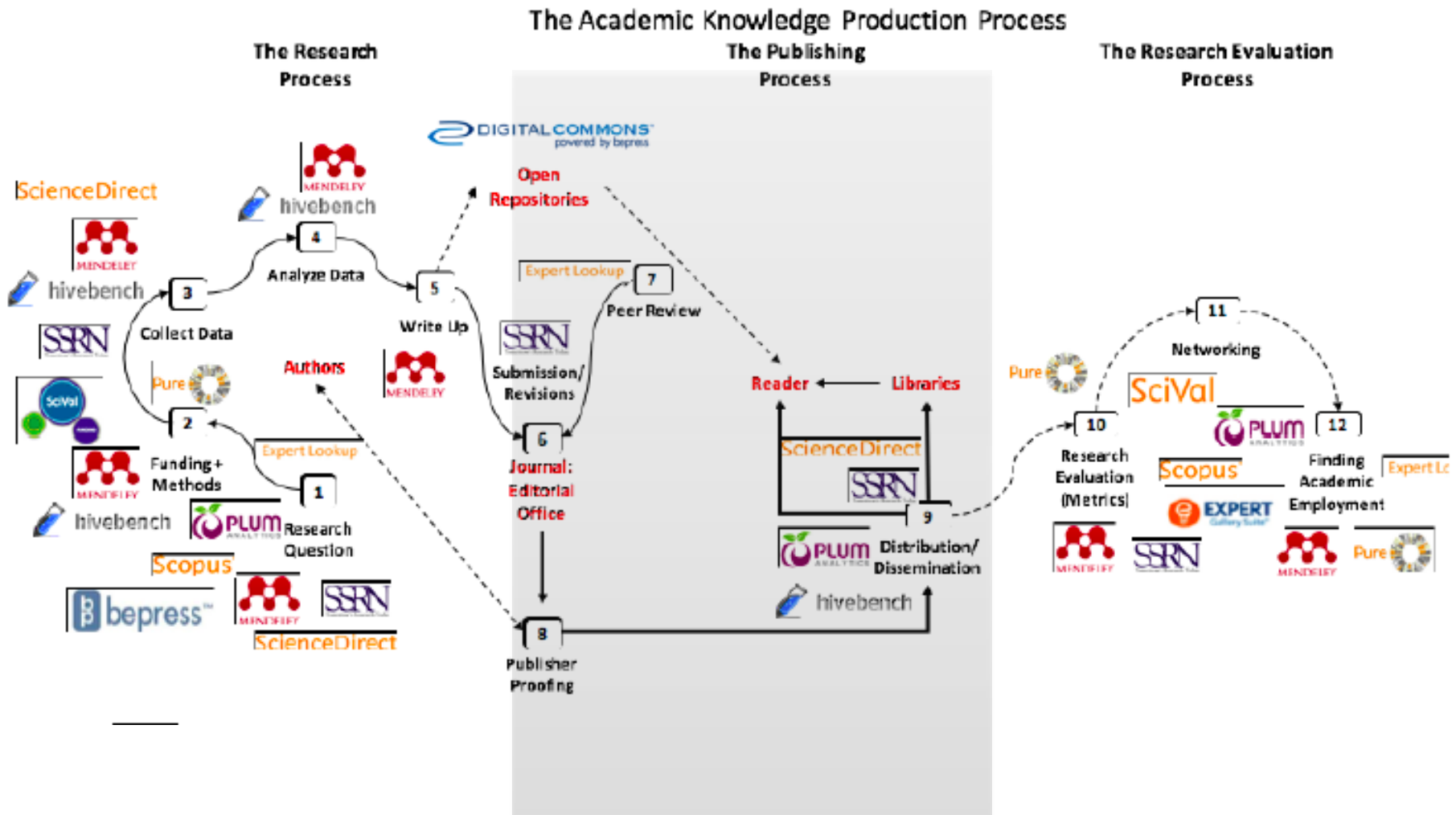


# Increasing publisher integration of the research lifecycle



By Jeroen Bosman and Bianca Kramer - [101 Innovations in Scholarly Communication](https://101innovations.wordpress.com/workflows/)  
<https://101innovations.wordpress.com/workflows/>

# Example: Elsevier's services



Publishers are increasingly in control of scholarly infrastructure and why we should care

Case Study of Elsevier Written by: Alejandro Posada and George Chen, University of Toronto Scarborough

# Elsevier's profits swell to more than £900 million

But 'risks' of open access and a shift away from subscription model could halt growth, publisher's financial results reveal

February 20, 2018



By [David Matthews](#)

Twitter: [@DavidMJourno](#)



# Scholarly communications

- Excellent
- Very good
- Good
- Average
- Poor





# Our solution



Strengthen and expand the institutional role in managing scholarly output

An idea that is not new, but who's time has come

**Lorcan Dempsey (OCLC) 2012.** Our environment has now changed. We live in an age of information abundance and transaction costs are reduced on the web. This makes the locally assembled collection less central. At the same time, institutions are generating new forms of data—research data, learning materials, preprints, videos, expertise profiles, etc.—which they wish to share with others.

## MIT Future of Libraries Report (2017)



### *Libraries as an Open Global Platform*

“... The MIT Libraries must operate as an **open, trusted, durable, interdisciplinary, interoperable content platform** that provides a foundation for the entire life cycle of information for collaborative global research and education.”

But... repository systems are using old technologies developed over 15 years ago that do not support the functionalities we need.



In their current form, repositories only perpetuate the flawed system



“What if we don’t change at all ...  
and something magical just happens?”



# Next Generation Repositories Working Group

(launched in April 2016)



Eloy Rodrigues, chair (COAR, Portugal)

Andrea Bollini (4Science, Italy)

Alberto Cabezas (LA Referencia, Chile)

Donatella Castelli (OpenAIRE/CNR, Italy)

Les Carr (Southampton University, UK)

Leslie Chan (University of Toronto at Scarborough, Canada)

Chuck Humphrey (Portage, Canada)

Rick Johnson (SHARE/University of Notre Dame, US)

Petr Knoth (Open University, UK)

Paolo Manghi (CNR, Italy)

Lazarus Matizirofa (NRF, South Africa)

Pandelis Perakakis (Open Scholar, Spain)

Jochen Schirrwagen (University of Bielefeld, Germany)

Daisy Selematsela (NRF, South Africa)

Kathleen Shearer (COAR, Canada)

Tim Smith (CERN, Switzerland)

Herbert Van de Sompel (Los Alamos National Laboratory, US)

Paul Walk (EDINA, UK)

David Wilcox (Duraspace/Fedora, Canada)

Kazu Yamaji (National Institute of Informatics, Japan)





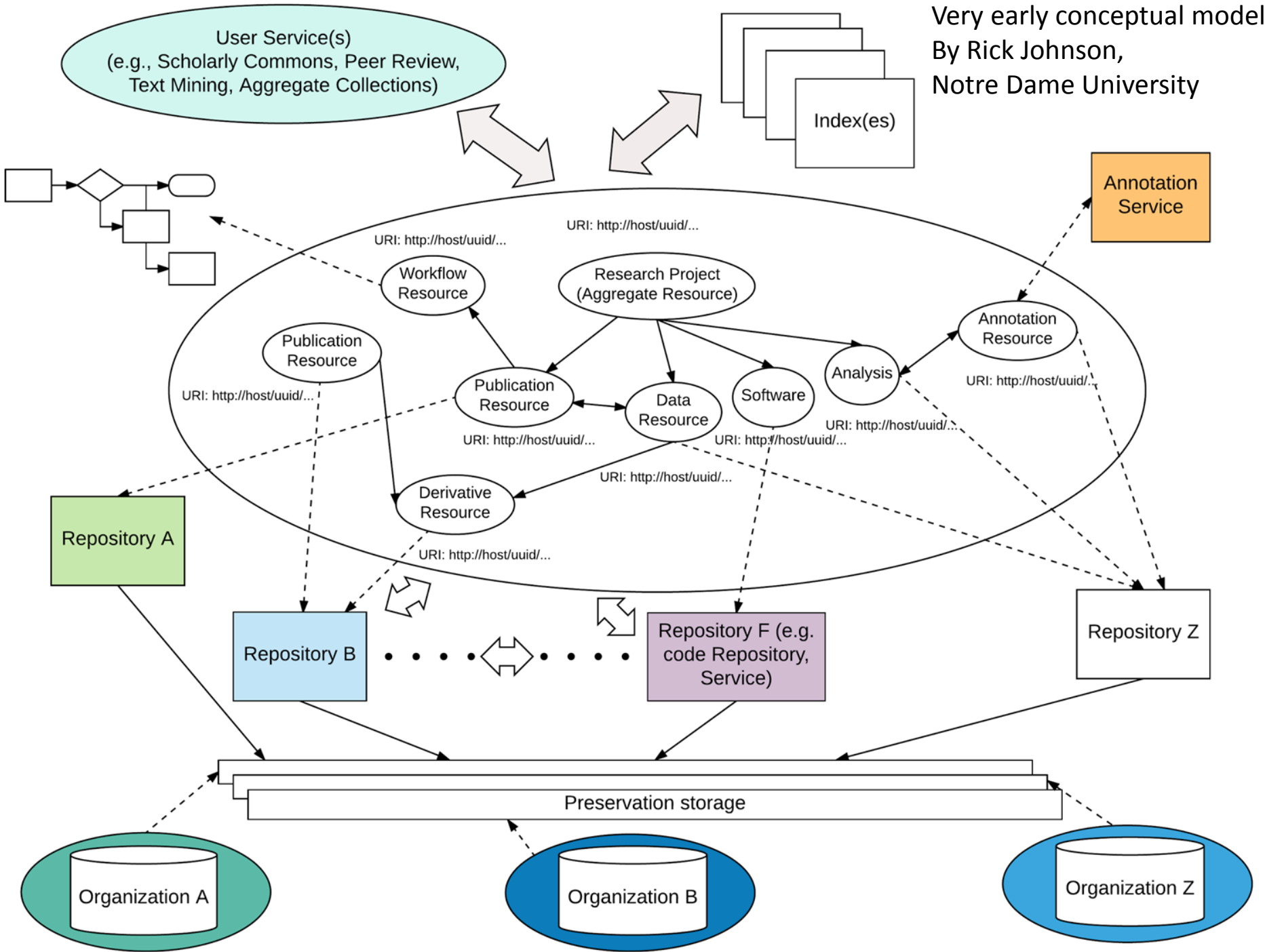
# Vision

“to position repositories as the foundation for a distributed, globally networked infrastructure for scholarly communication, on top of which layers of value added services will be deployed, thereby transforming the system, making it more research-centric, open to and supportive of innovation, while also collectively managed by the scholarly community.”

# Guiding principles

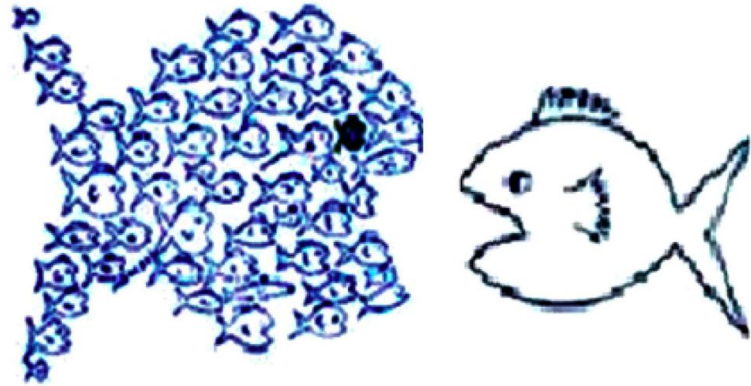
- Distribution of control
- Inclusiveness and diversity
- Public good
- Intelligent openness and accessibility
- Sustainability
- Interoperability

Very early conceptual model  
By Rick Johnson,  
Notre Dame University



# 2 critical aspects to this vision

1. Common behaviors of repositories  
(interoperability)



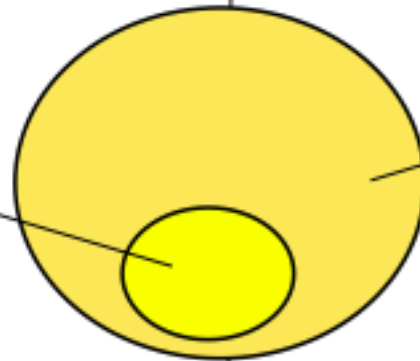
1. Value added services on top of the resources in  
repositories

## Current repositories

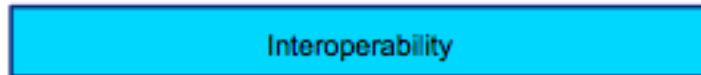
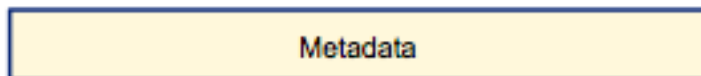
## Next generation repositories

Services we can develop with repositories today

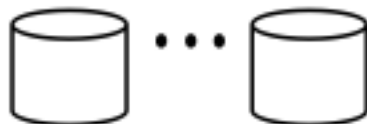
Services we can develop with the next generation of repositories



Conceptual layer



Persistence layer

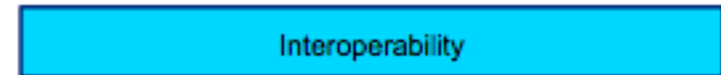


Conceptual layer

Usage interactions and metrics	Comments	Peer-reviews	Messages
--------------------------------	----------	--------------	----------

Global sign-on

Metadata	Content	Links between resources	Notifications
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Persistence layer



By Petr Knoth, Open University, UK



# Key functionalities of a global repository-based network

- Preserves and provides access to a wide variety of research outputs
- Enables better discovery including batch, navigation and notification
- Supports research assessment including open peer review and standard usage metrics
- Provides the foundation for a transparent social network including annotation, notification feeds, and recommender systems

**Beyond the journal: All valuable research contributions should be available and recognized**





NEXT GENERATION  
REPOSITORIES



COAR publishes recommendations for  
next generation repositories

[Browse Technologies](#)

<http://ngr.coar-repositories.org/>

# 11 Behaviors



1. Exposing Identifiers
2. Declaring Licenses at the Resource Level
3. Discovery Through Navigation
4. Interacting with Resources (Annotation, Commentary, and Review)
5. Resource Transfer
6. Batch Discovery
7. Collecting and Exposing Activities
8. Identification of Users
9. Authentication of Users
10. Exposing Standardized Usage Metrics
11. Preserving Resources

# 19 Technologies, Standards, and Protocols

1. Activity Streams 2.0
2. COUNTER
3. Creative Commons Licenses
4. ETag
5. HTTP Signatures
6. IPFS International Image Interoperability Framework
7. Linked Data Notifications
8. ORCID and other author IDs
9. OpenID Connect
10. ResourceSync
11. SUSHI
12. SWORD
13. Signposting
14. Sitemaps
15. Social Network Identities
16. Web Annotation Model and Protocol
17. WebID and WebID/TLS
18. WebSub
19. Webmention



Research is global: we need interoperable hubs to support information exchange across repositories



# Implementation – 3 major areas of effort



## 1. New technologies in repositories

- Already ongoing!!!
- OpenAIRE – Europe
- National Institute of Informatics (NII) - Japan
- US Next Generation Repositories Implementers Group
- CARL Open Repositories Working Group - Canada
- Meeting of open source platforms at open source repository platforms at Open Repository 2018

## 2. Next generation repository networks or hubs



NEXT GENERATION  
REPOSITORIES

20 repository networks meeting in Hamburg – May 14 & 15



COAR Annual Meeting & General Assembly  
Hamburg  
May 14-17

2018

# Implementation – 3 major areas of effort



## **3. Monitoring of new technologies, standards and protocols**

COAR Next Generation Repositories Editorial Group

Andrea Bollini

Kathleen Shearer

Rick Johnson

Herbert Van de Sompel

Paolo Manghi

Paul Walk

Eloy Rodrigues

Kazu Yamaji



# Five prerequisites for a sustainable knowledge commons

1

Strengthen local institution-based services that preserve and provide access to diverse and valuable research products

Connect local services to national, regional and global networks through the adoption of interoperable standards and practices

2

3

Begin to redistribute funds towards services that add value to the networks, such as peer review

Improve the processes used to evaluate research contributions to include a wider range of qualitative and quantitative metrics and indicators

4

5

Adopt the principles and governance that will ensure the commons reflects the needs of the global research community



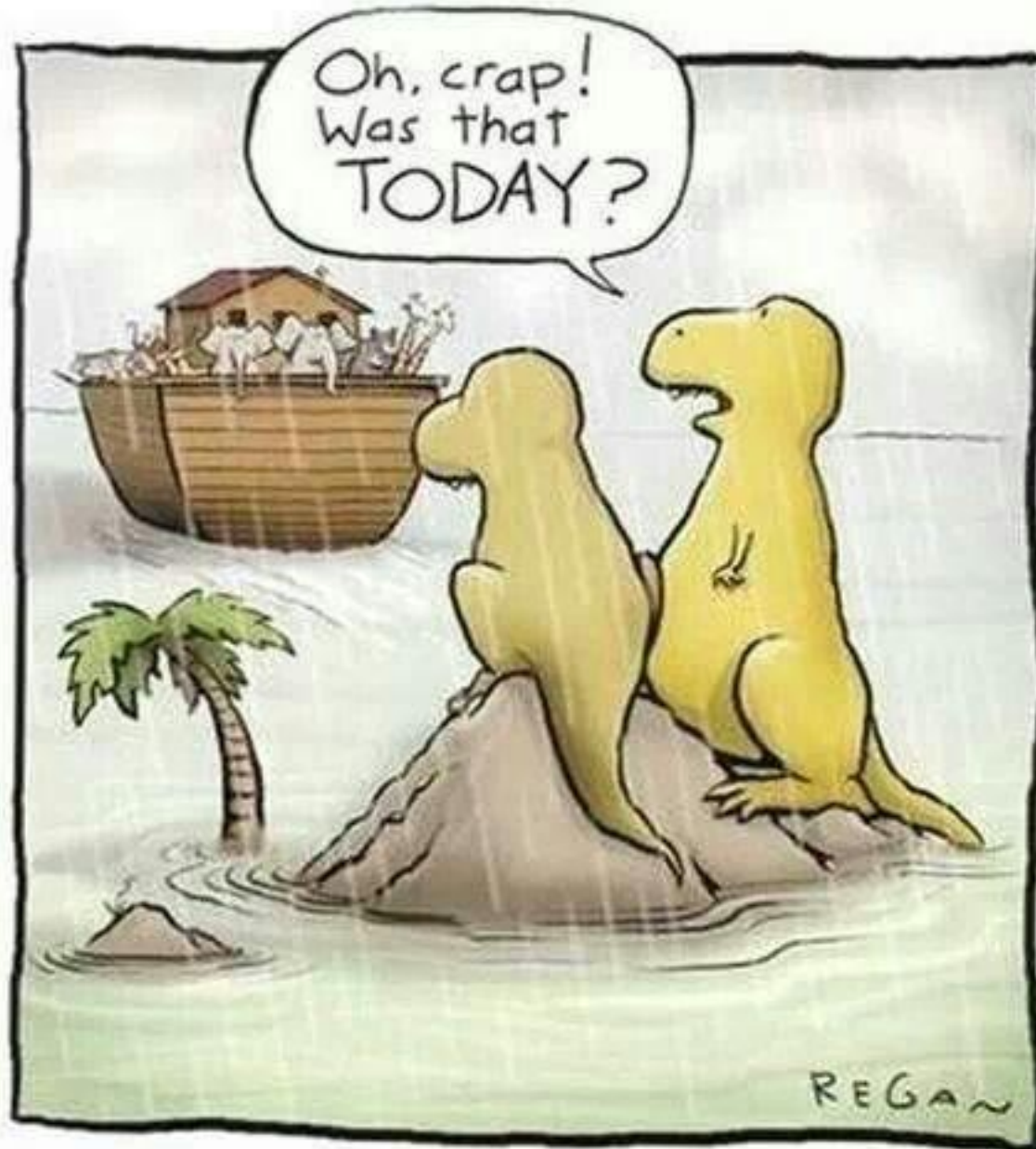
NEXT GENERATION  
REPOSITORIES

**Collaboration AT SCALE is necessary to change the system!**





# It's time to act!





Kathleen Shearer, Executive Director, COAR

[kathleen.shearer@coar-repositories.org](mailto:kathleen.shearer@coar-repositories.org)

twitter: @KathleeShearer