

# Crossing the Line

to achieve  
greater impact

Ann Gabriel  
Vice President  
Academic & Research  
Relations, Elsevier

STM

STM Society Day  
April 24, 2018  
Philadelphia



# Agenda

## Breaking Down Silos

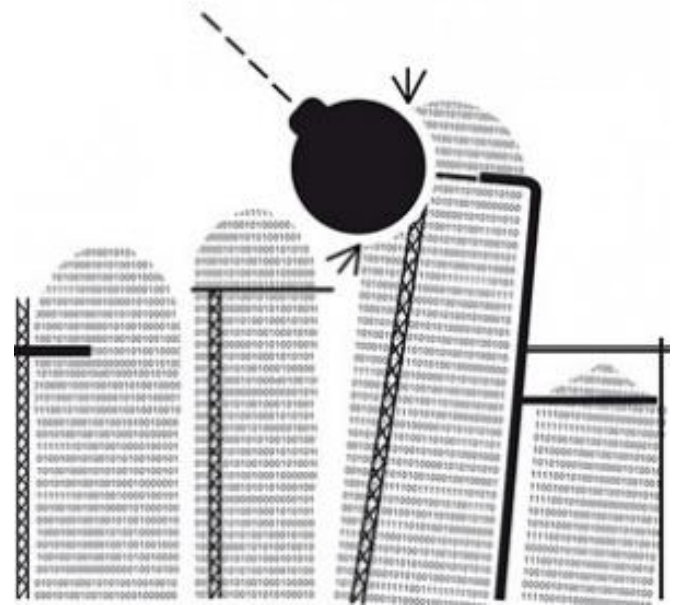
I. Business models

II. Partnerships

III. Technologies

IV. Workforce Development

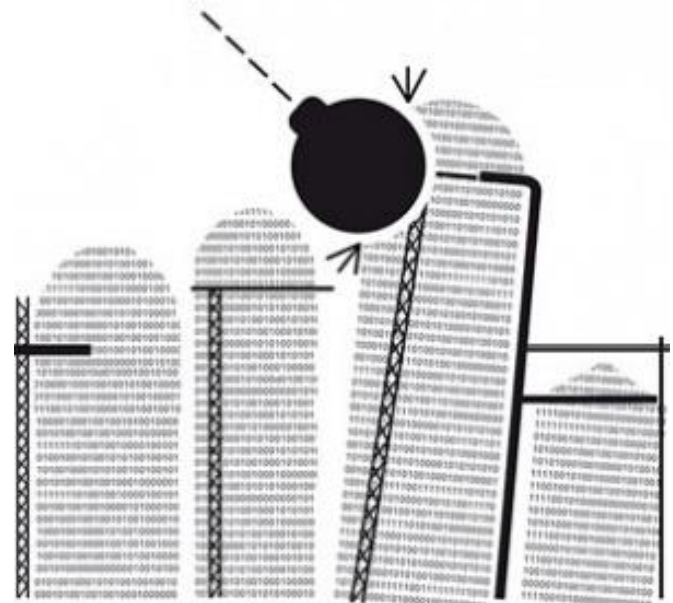
V. IMPACT



# Business Models

## Breaking Down Silos

- i. Subscription / OA
- ii. Preprints
- iii. Repositories
- iv. Peer Review
- v. Funders



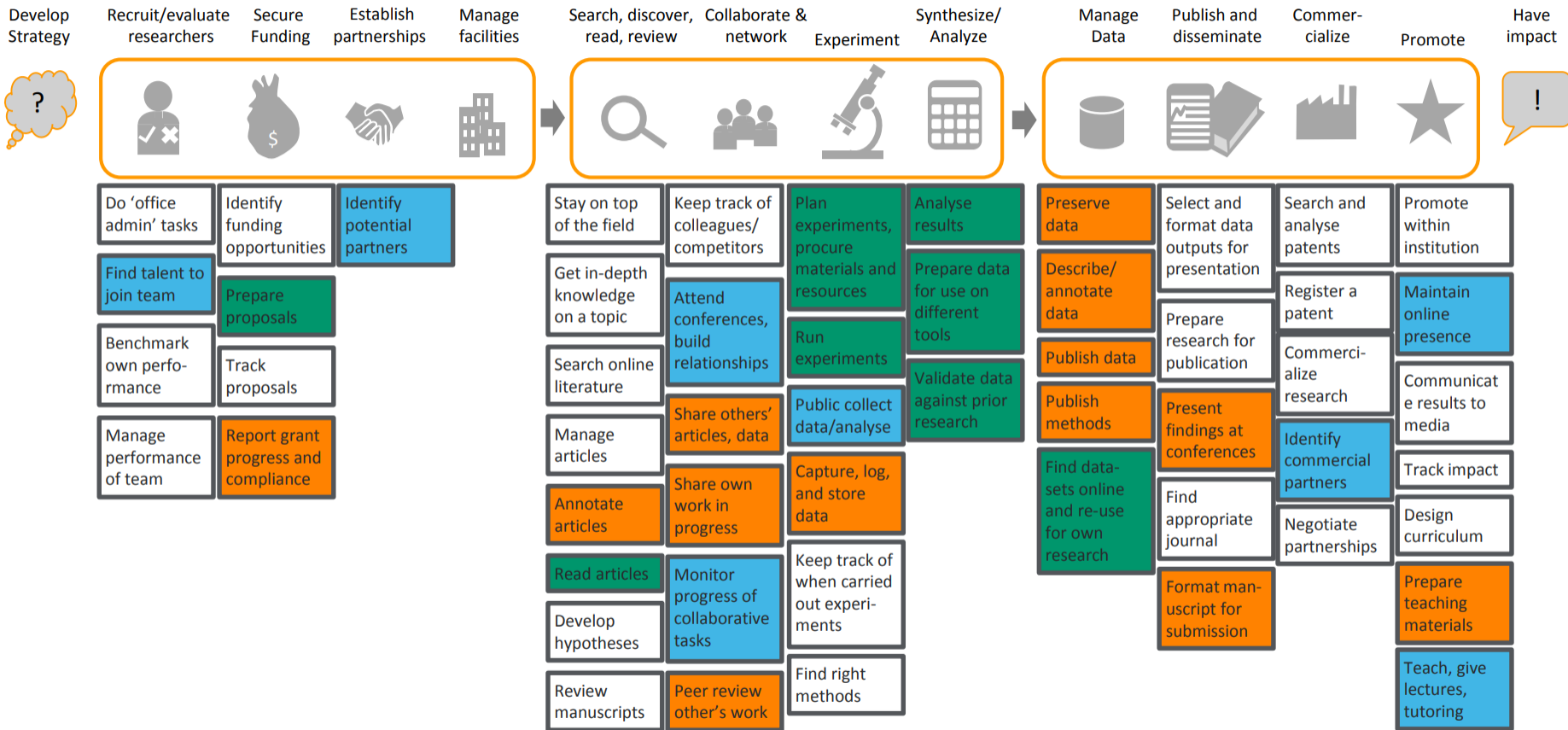
# I.i. Business models: Across Researcher workflow

## Are these functions siloed?

### “Enabling Research”

### “Doing Research”

### “Sharing Research”

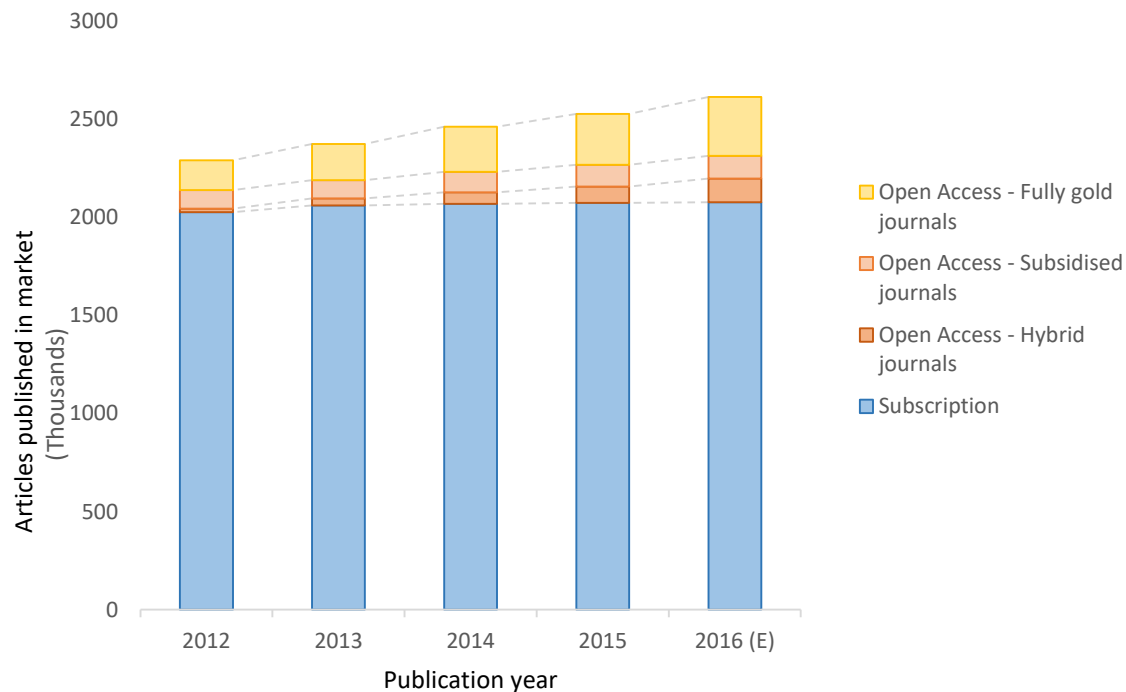


Open Science opportunity type

More open	More collaborative	More transparent
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# I.i. Subscription / OA: Article growth by journal business model

In 2016 there were an estimated **2.1 million subscription** and **0.5 million open access articles** published worldwide.



## Subscription content

- 80% share of total articles in 2016

## Open access content

- APC-based open access articles is 16% share of total content in 2016
- All gold open access, including subsidized articles, is 20% share of total content.

## Elsevier perspective

- In 2016, Elsevier published around 420,000 articles
- Includes over 25,000 open access articles

## I.i. Subscription / OA – Tech Trends

### Trends

- Open Source Solutions
- Modular Solutions
- New & Expanded Service Provision
- Coalitions and Cooperatives
- OA Specialists

### Examples

- Collaborative Knowledge Foundation CoKo
- Integrative services to support best in class
- Hindawi / AAAS Partnership
- Scientific Society Publisher Alliance (SSPA)
- Hosting, e.g. Ubiquity Press, Open Research Central from F1000, eLife Continuum; to exploring new business models e.g., KnowledgeUnlatched; aiding in content discovery e.g., ScienceOpen



## I.i. Subscription / OA: Silo breakers



 Kopernio



We are excited to announce that Kopernio has joined Clarivate Analytics, the home of *Web of Science* and the *Journal Impact Factor*. You can find out more details [here](#).

CHORUS



# I.i. Subscription / OA: Silo breakers - SCNs

- Relatively new players in the scholarly communication chain
- Lots to choose from!
- Enable researchers to share information, participate in discussions and collaborate.
- Can facilitate sharing of either full text and/or links



## Already working with publishers

### ScienceDirect Content Now Available to MyScienceWork Users

Share This: [f](#) [t](#) [in](#) [g+](#)

Elsevier and MyScienceWork c

Amsterdam, April 2, 2014

Elsevier, a world-leading provider of scientific content, has announced a strategic partnership with MyScienceWork, a leading scientific social network.

colwiz announces strategic partnership and investment from the American Chemical Society, the world's largest scientific society

Mar 27th, 2013

Oxford, UK March 27, 2013  
productivity software company  
partnership and a strategic  
society. Under the terms of  
platform for ACS ChemW

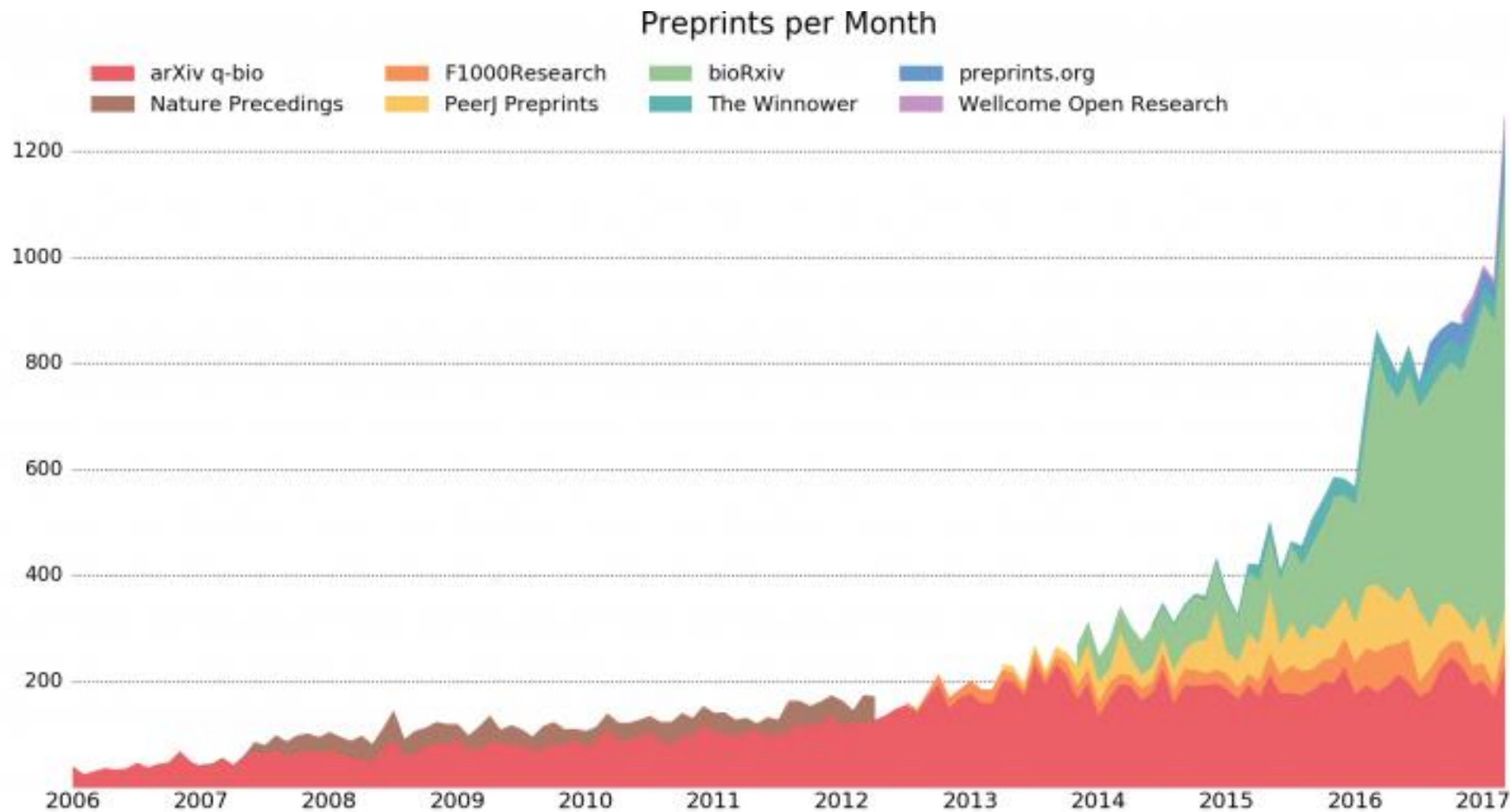
### Wiley offers Enhanced PDFs across Wiley Online Library in partnership with ReadCube

Keeping  
improvi  
Anywh  
will beg  
Enhanc

Springer Nature and ResearchGate announce new cooperation to make it easier to navigate the sharing of academic journal articles



## I.ii. Pre-prints – the original silo-breaker



- Connection between preprint servers and submission
- Initiatives around validation and credit mechanisms

**SSRN**  
tomorrow's research today

**arXiv.org**

## I.ii. Pre-prints



# Extramural *Nexus*

[Home](#)[Open Mike](#)[Archive](#)[Subscribe](#)[Contact](#)

## Open Mike

*Helping connect you with the NIH perspective, and helping connect us with yours*

Posted on [March 28, 2017](#) by [Mike Lauer](#)

### Following Up On Interim Research Products

The role of preprints — complete and public draft manuscripts which have not gone through the formal peer review, editing, or journal publishing process — continues to be a hot topic in the biological and medical sciences. In January, three major biomedical research funders — [HHMI](#), the [MRC](#), and the [Wellcome Trust](#), changed their policies to allow preprints to be cited in their progress reports and applications.

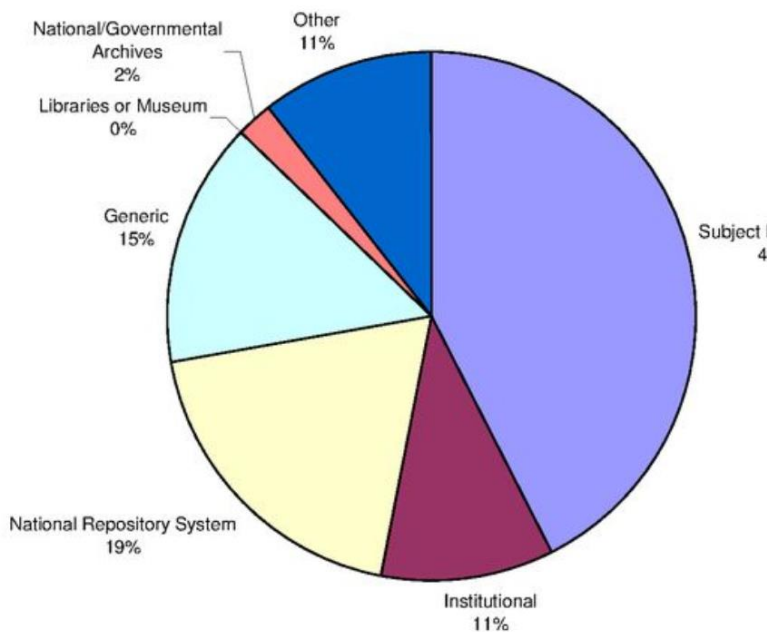


Dr. Michael Lauer is NIH's Deputy Director for Extramural Research, serving as the principal scientific leader and advisor to the NIH Director on the NIH extramural research program.

# I.iii. Repositories

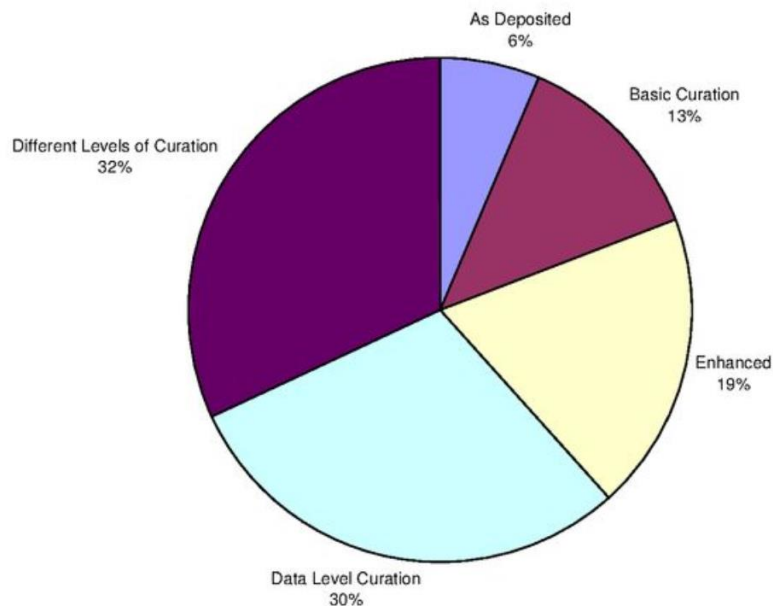
**Figure 1. Characteristics and focus of the repositories (N=47)**

How would you characterise the type of repository?  
(N = 47)



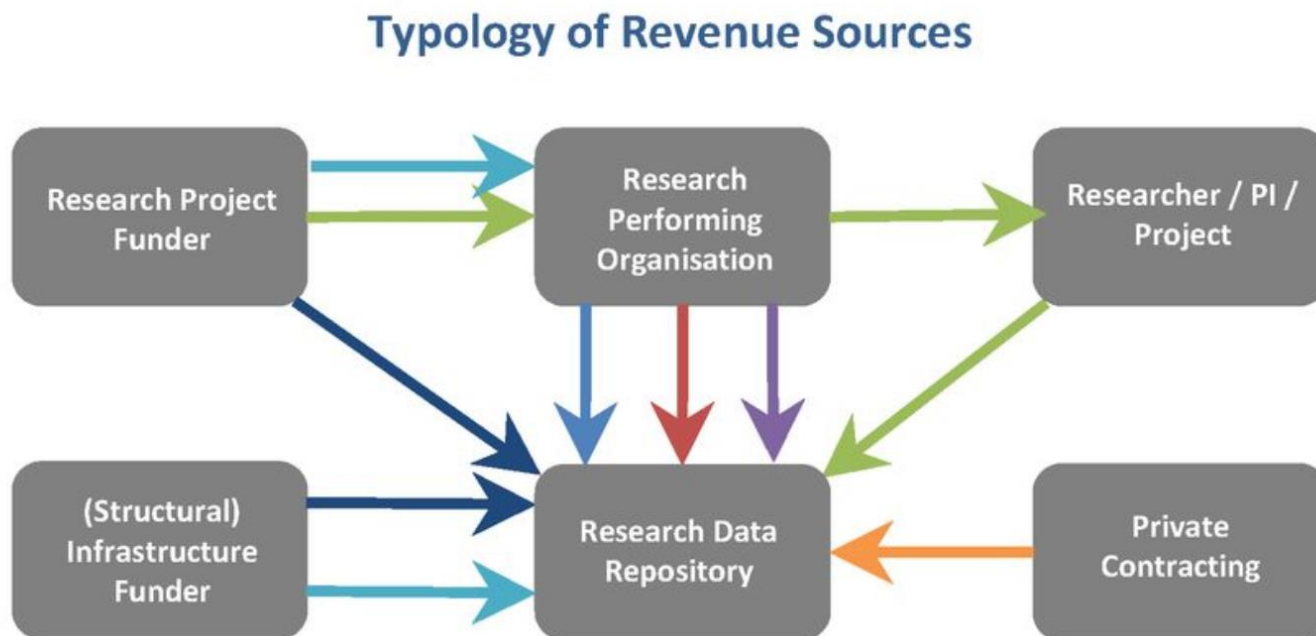
**Figure 2. Levels of curation performed by the repositories (N=47)**

Level of curation performed?  
(N = 47)



## I.iii. Repositories

Figure 3. A typology of research data repository revenue sources



- 1) Structural (central contract)
- 2) Hosting Support (indirect or direct support through institutional hosting)
- 3) Annual Contract (from depositing institution)
- 4) Data Deposit Fee (may be paid by researcher, RPO or publisher, may originate with funder)
- 5) Access Charge (for the data or for value-adding services)
- 6) Projects (to develop infrastructure or value-adding services)
- 7) Private Contracting (services to parties other than core funder)

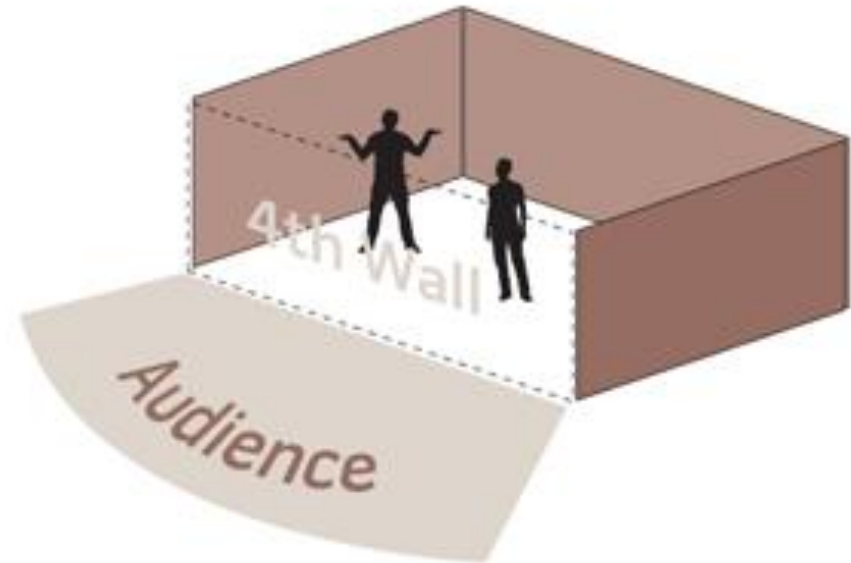
# I.iv. Peer Review

 **Richard Sever**  
@cshperspectives Following

Interesting Cell pilot shows reviewers like interacting but prefer anonymity  
[crosstalk.cell.com/blog/towards-a ...?](http://crosstalk.cell.com/blog/towards-a-more-transparent-and-collaborative-review-process) via @biologyfan



**Towards a more transparent and collaborative review process**  
Peer review is collaboration, so Milka Kostic highlights some ways in which Cell Press is striving to make peer review more transparent and collaborative.  
[crosstalk.cell.com](http://crosstalk.cell.com)



**Towards a more transparent and collaborative review process**

Posted by Milka Kostic | Published September 11, 2017, 10:49

[Tweet](#) [Share](#) 38 [Like](#) 16 [Share](#) [G+](#)

**What changed? Transparency in a table to highlight the value of peer review**

Posted by Deborah Sweet | Published September 14, 2017, 08:00

[Tweet](#) [Share](#) 17 [Like](#) 21 [Share](#) [G+](#)



# I.v Funders



## Open Research Central

The central portal for open research publishing

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IMMEDIATE PUBLICATION | OPEN DATA  
OPEN PEER REVIEW | OPEN ACCESS



For all  
researchers

**F1000Research**



For Wellcome-funded  
researchers

**Wellcome Open Research**



For Gates Foundation-funded  
researchers

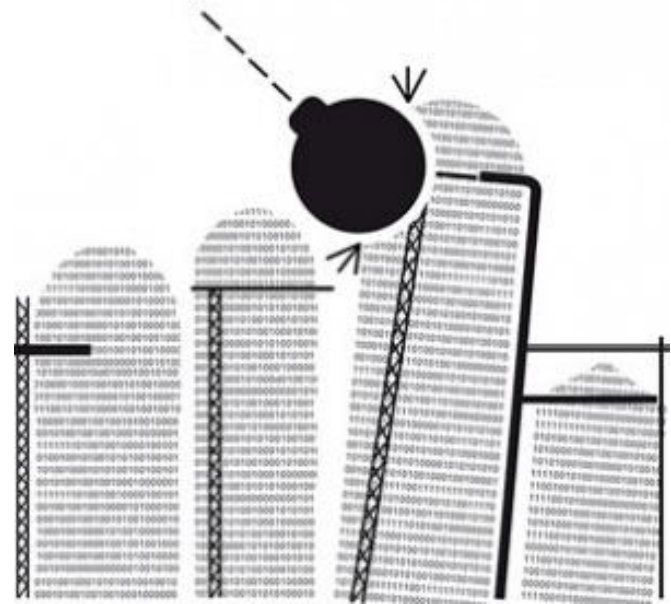
**Gates Open Research**



# Partnerships

## Breaking Down Silos

- Academia and Industry
- Data Science Partnerships
- Coalitions



## II.i. Academia and Industry

### UIDP26 Conference in San Jose, CA

Mark your calendars for UIDP26, our semi-annual conference being hosted by Cisco Systems in partnership with Princeton University, April 2018 in San Jose, CA.



**MIT**  
INDUSTRIAL  
LIAISON  
PROGRAM **ILP**

**THE** WORLD  
UNIVERSITY  
RANKINGS  
TIMES HIGHER EDUCATION

### Industrial strategy boosts university-industry engagement funding

UK government's White Paper offers commitments on HEIF funding and assigns role to OfS

[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial-strategy-white-paper-web-ready-version.pdf)



## II.i. Academia and Industry

### Cross institutional collaboration continues to increase

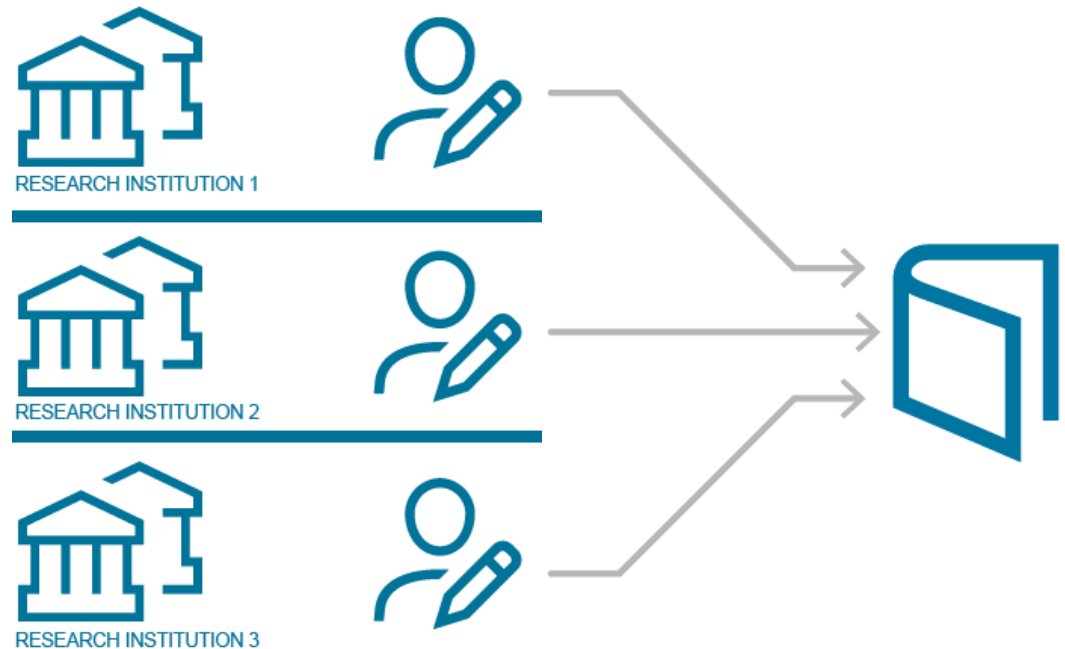
**44.4%**

of academic publications in 2017 involved authors from more than one institution.

An increase of

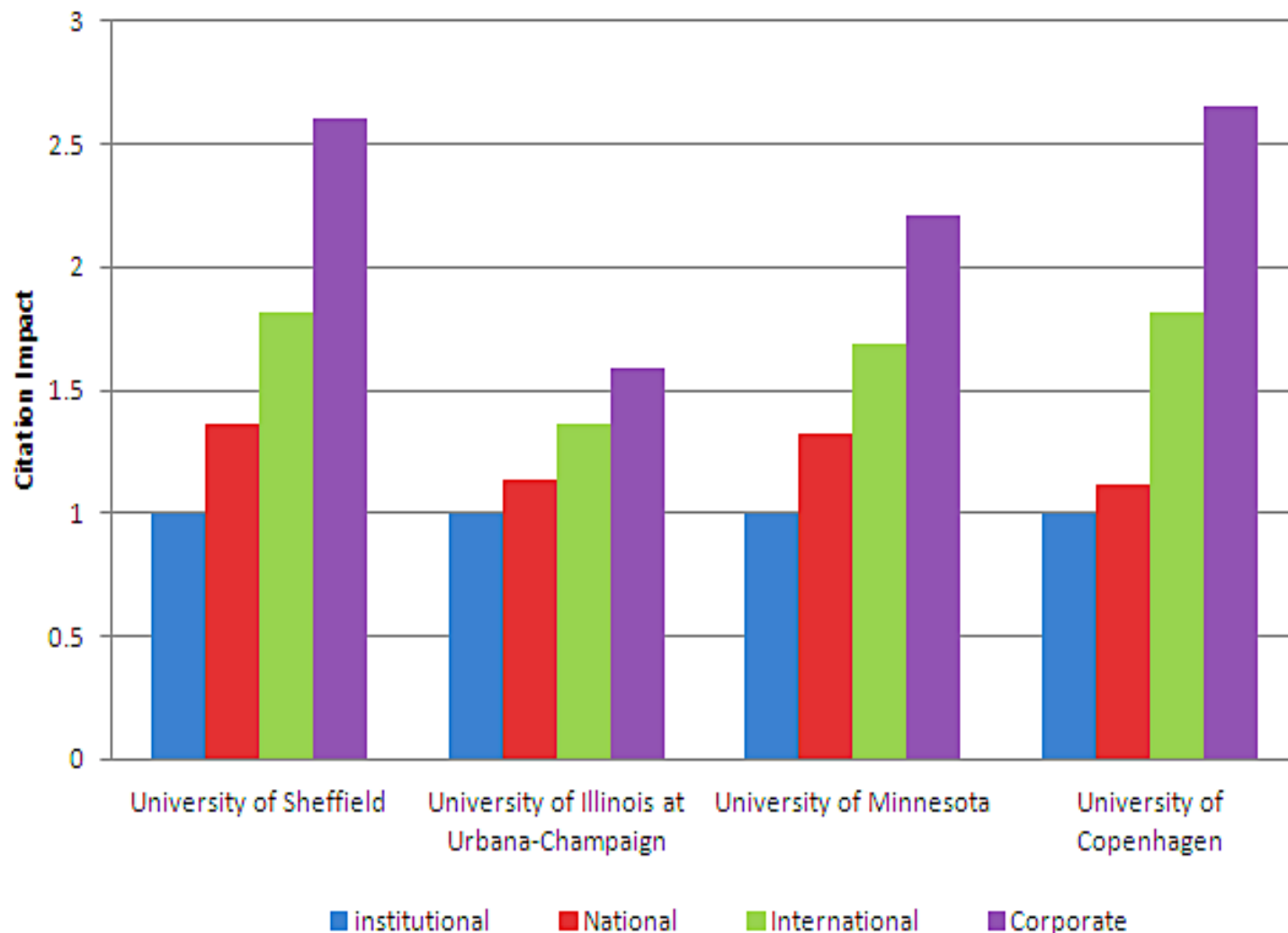
**9.1%**

between 2010 and 2017.



## II.i. Academic-industry collaboration produces highest impact

### Impact of collaboration



## II.ii Data Science Partnerships

### Harvard and Elsevier explore collaborations in data science

For the Harvard Data Science Initiative, colleagues brainstormed about how to support evidence-based policy and advance precision medicine and healthcare

By [Alison Bert, DMA](#) December 15, 2017

 Elsevier Connect



Ceilyn Boyd, Research Data Program Manager for the Harvard Library, speaks at the roundtable on "Key Factors for Scientific Impact on Policy" as Dr. Michelle Gregory, VP of Content and Innovation at Elsevier (left), and Anita de Waard, VP of Research Data Collaborations at Elsevier, look on.

(Photo by Alison Bert)

## II.iii Coalitions

FOR IMMEDIATE RELEASE | Tue Mar 20 13:17:00 EDT 2018

# American Chemical Society partners with leading Societies to support ChemRxiv™



WASHINGTON, March 20, 2018 — The American Chemical Society (ACS) today announced its partnership with the Royal Society of Chemistry and the German Chemical Society (GDCh) to support the financial and strategic development of [ChemRxiv](#), the premier preprint server for the global chemistry community. This strategic partnership among three of the largest scientific societies in the chemical sciences will enable researchers to rapidly disseminate their findings in a forum that is free and globally accessible.



## Scientific Society Announces International Coalition to Advance Optics and Photonics Initiatives

28 March 2017

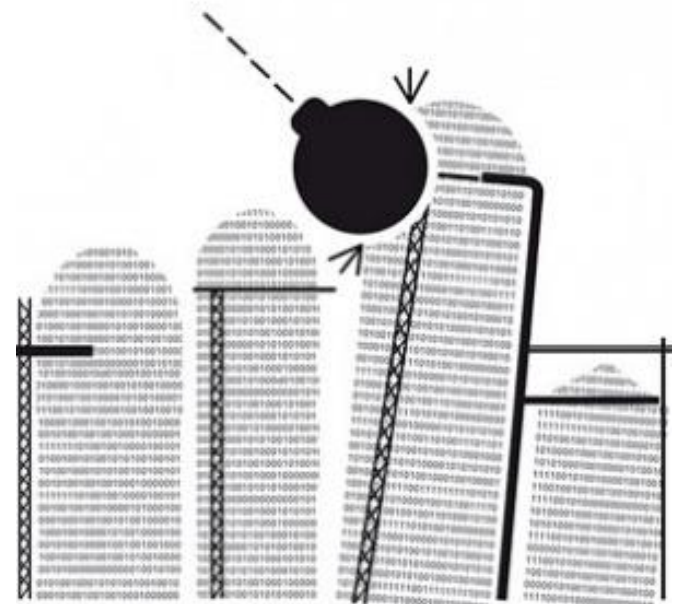
Top Scientific Society Announces International Coalition to Advance Global Optics and Photonics Initiatives

OSA launches International Photonics Advocacy Coalition during a workshop among EU scientists and policy leaders

# Technologies

## Breaking Down Silos

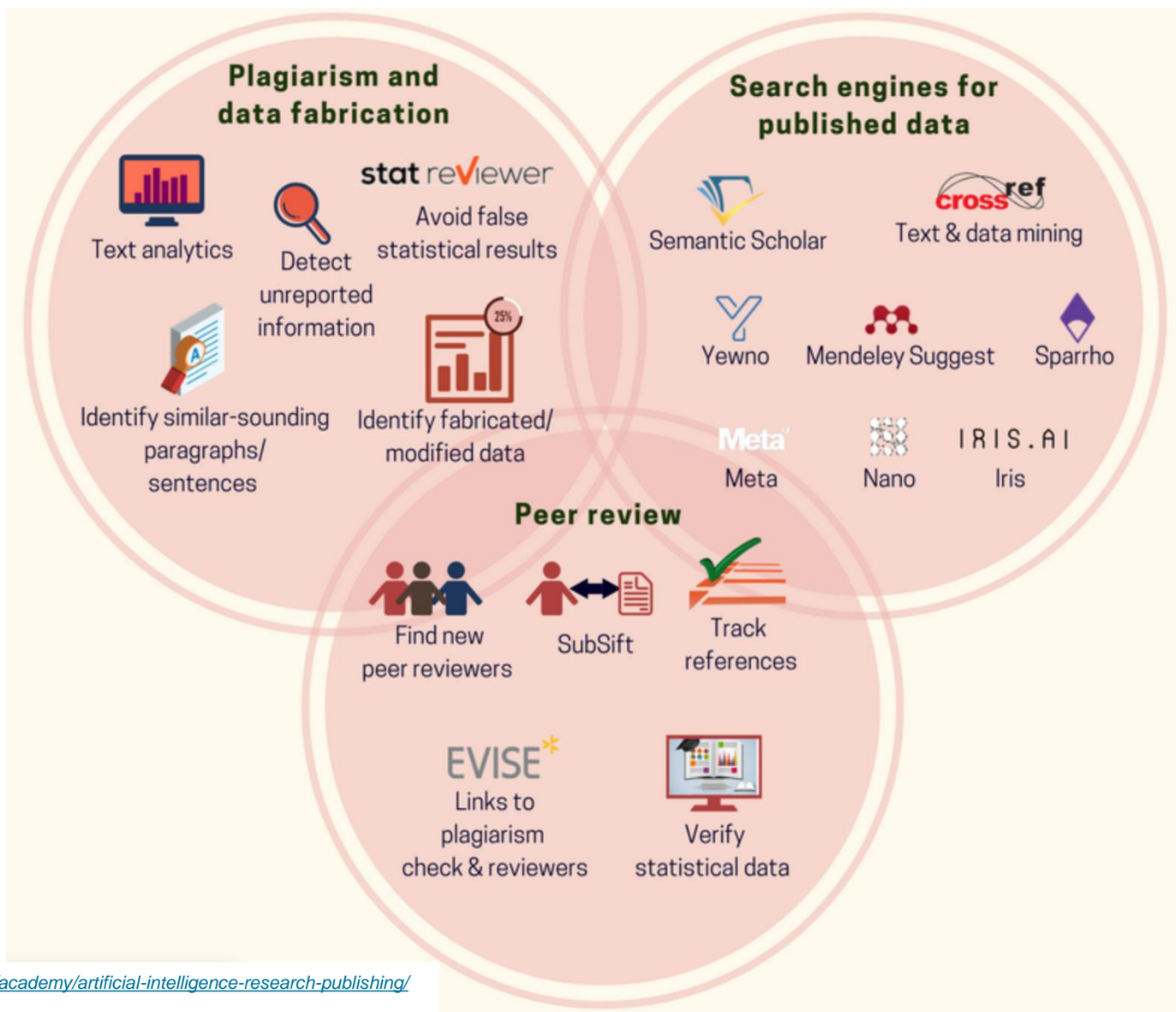
- AI / NLP
- Analytical Services
- Predictive Modeling
- Blockchain



## III.i AI / NLP

- Identifying new peer reviewers with broader searches
- Fighting plagiarism with software that can identify components of whole sentences or paragraphs rather than verbatim text
- Reporting when authors fail to report key information needed to make the decision to accept or reject a paper
- Finding bad statistics that can lead to false conclusions
- Ferreting out data fabrication.

# III.i AI / NLP





## III.i AI / NLP

## Teaching machines to summarize

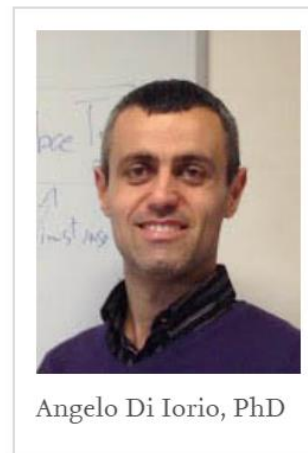
### Novel ways to assess novelty



Elsevier partnered with Prof. Pushpak Bhattacharyya, Director of Computer Science at the Indian Institute of Technology, Bombay, to create the Center of Excellence at IIT Patna, a facility dedicated to machine learning and NLP.



Prof. Yi-Ke Guo and his team at Imperial College London are using machine learning and NLP to create meaningful summaries of articles via neural networks.



Angelo Di Iorio, PhD

## Intelligently enriched bibliographies



# III.ii Analytical Services

INTERNATIONAL COMPARATIVE PERFORMANCE OF THE **UK RESEARCH BASE 2016**

Department for Business, Energy & Industrial Strategy

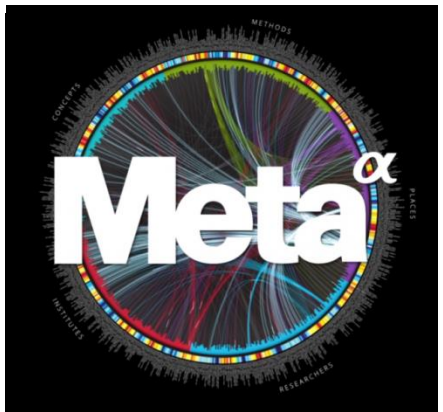
ELSEVIER

**Analytical Services**

Analytical Services provides accurate unbiased research performance analysis by combining our high quality data sources with technical and bibliometric expertise formed from over 130 years as a journal publisher.

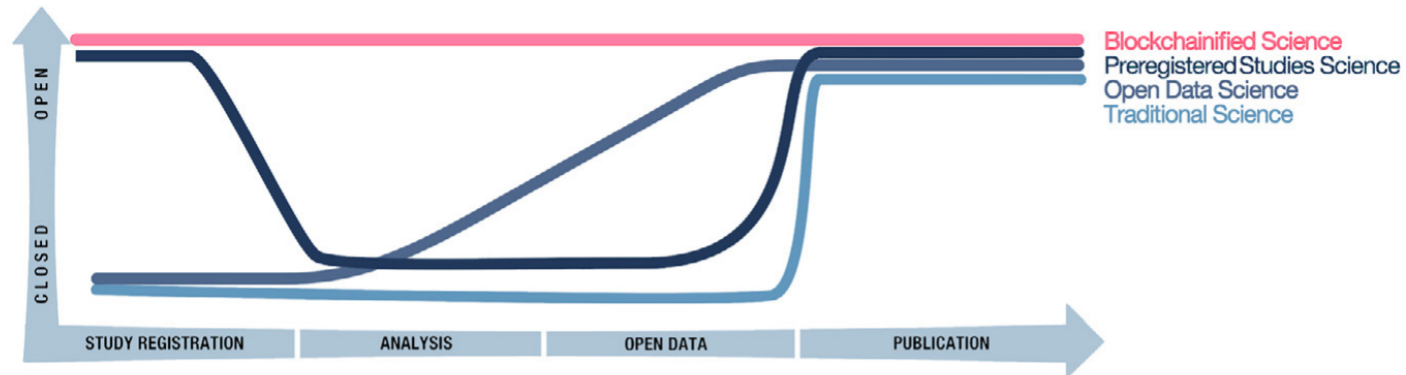
 Dimensions

 **Clarivate Analytics**





## III. iv Block Chain



A “blockchained” science would make the research process up to publication significantly more open and transparent, argues Dr Bartling. “Blockchain in science bears the unique chance to realign science’s incentive structures with honesty, effectiveness, collaboration and true inventiveness”.

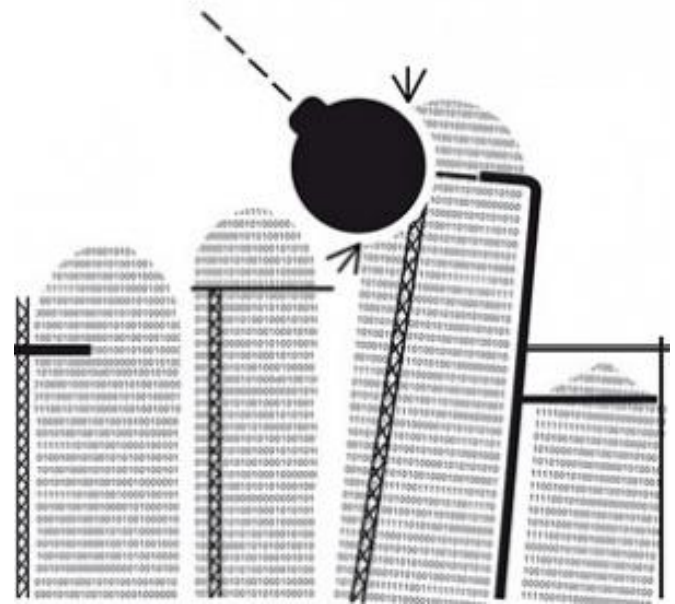
*Figure 1. How blockchain could open the research process. Traditional science only becomes open at the point of publication. Although the pre-registration of studies and the publication of data opens up research at multiple stages, a blockchained science would do that in the most comprehensive way.*

*Figure provided by Dr. Soenke Bartling under CC-BY license.*

# Workforce

## Breaking Down Silos

- Libraries as Publishers
- Workforce Development
- Diversity & Inclusion
- Changing workforce culture



# IV.i Libraries and Publishers; Libraries as Publishers



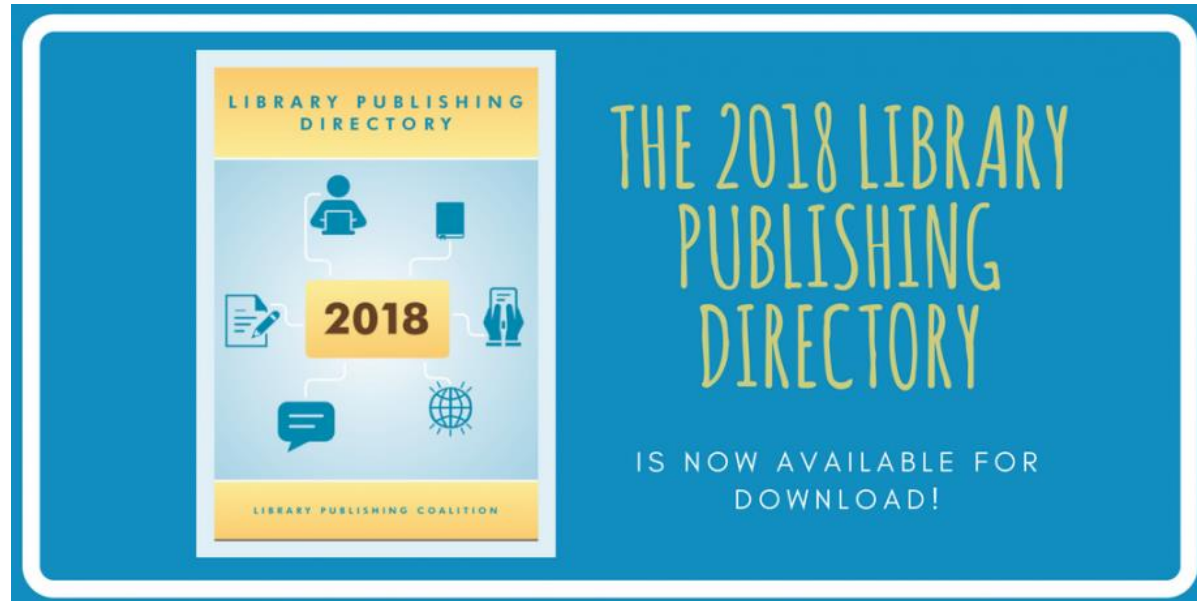
Pay It Forward



 University of California  
**CDL**  
 California Digital Library

THE  
 ANDREW W.  
**MELLON**  
 FOUNDATION

## IV.i Libraries and Publishers; Libraries as Publishers




# IV. ii Workforce Development



ELSEVIER

## Featured jobs


[Business Controller](#)

 Amsterdam, Netherlands

[Software Engineer](#)

 Philadelphia, USA

[Director, Insights & Analytics](#)

 London, UK

[Director, Clinical e-Learning  
\(Clinical Skills\)](#)

 Philadelphia, USA


[Manager, Drug Product Data](#)

 Florida, USA


[Director, Clinical Pathways](#)

 Philadelphia, USA

[Scrum Master](#)

 London, UK

[Apply here: US Graduate  
Program](#)

 Philadelphia, New York &  
Dayton

[Apply here: UK Graduate  
Program](#)

 London & Oxford



## IV. ii Workforce Development

### Top 10 skills

#### in 2020

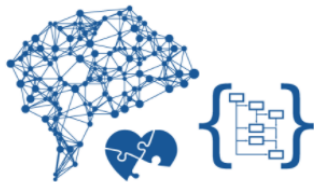
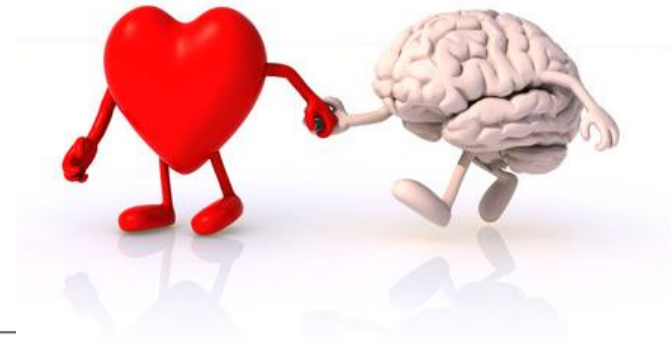
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1. Complex Problem Solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with Others
6. Emotional Intelligence
7. Judgment and Decision Making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility

#### in 2015

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1. Complex Problem Solving
2. Coordinating with Others
3. People Management
4. Critical Thinking
5. Negotiation
6. Quality Control
7. Service Orientation
8. Judgment and Decision Making
9. Active Listening
10. Creativity





# IV.iii Diversity & Inclusion

**Diversity in publishing - still hideously middle-class and white?**



## Gender pay gap figures reveal big publishing's great divide

The UK's biggest publishers release figures showing average differences in pay between men and women ranging from 11.3% to 29.69%

**CONGRESS CHAIRS**

Joseph Silman Synthetic Biologics	Gregor Reid Western University
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Our early confirmed speakers include:

Dr Trevor Lawley Group leader Host: Microbiota Immunity Laboratory Wellcome Trust Ranger Institute	Professor Tim Spector Professor of Genetic Epidemiology Kings College London	Professor Max Newborg Professor of Internal medicine and diabetes AMC Amsterdam	Professor David Barry Associate Professor Microbial Biology University of Vienna	David Kyle CEO Evolve Biosystems
Professor Julian Marchesi Professor of Human Microbiome Research Cardiff University	Johan van Hyckama Vlieg Vice President Microbiome & Human Health Innovation Chr. Hansen A/S	Dr James Kinross Senior Lecturer in Colonial Surgery Imperial College London	Dr David Cook Chief Scientific Officer Seres	Dr Larry Weiss Chief Medical Officer ADBiome
Dr Jamie Lorimer Associate Professor School of Geography and the Environment University of Oxford	Professor Gregor Reid Professor of Microbiology and Immunology and Surgery Western University	Professor Curtis Huttenhower Associate Professor of Computational Biology and Biostatistics Harvard School of Public Health	Professor Jeroen Raes Group Leader Bioinformatics and (meta-) Systems Biology, VIB KULeuven	Denise Kelly Investment Advisor Beverly Partners

Male Female

3<sup>rd</sup> ANNUAL EUROPEAN MICROBIOME CONGRESS

**Another White Men's Microbiome meeting from Kisaco Research #YAMMM #Manel**

As this is a pattern from Kisaco I call for community to:

- Boycott this meeting
- Boycott all Kisaco meetings
- Call on the sponsors to withdraw support
- Call on speakers to cancel participation

**Jonathan Eisen** ✓  
@phylogenomics

Follow

Another white men's microbiome meeting from Kisaco #YAMMM #manel #STEMDiversity  
[phylogenomics.blogspot.com/2017/07/anothe...](http://phylogenomics.blogspot.com/2017/07/anothe...)  
 7:33 AM - Jul 24, 2017

## IV.iii Diversity & Inclusion – What we can measure, we can change



- **Evidence-informed** introduction
- **Data** chapters
  - Overview of **research performance** (outputs, quality, and impact) through a gender lens using our unique gender disambiguation methodology;
  - Gender comparison of **social aspects of research**, including leadership, collaboration, and mobility;
  - Snapshot of **published gender research** as a discipline
- **Interviews** with global experts and influencers for **context**
- **Mendeley group** with all the references

## IV.iii Diversity & Inclusion – Elsevier Gender Working Group



- 1) Gender diversity for journal editorial boards, speakers at Elsevier conferences, and award selection committees
- 2) Addressing implicit bias in peer review
- 3) Enhancing editorial policies on reporting about sex & gender in research
- 4) Promoting studies on sex & gender in research and diversity in STEM
- 5) Applying analytics to gender issues
- 6) Enhancing gender diversity within  
Elsevier management  
EDGE Initiative



## IV. iv Workforce Transformation

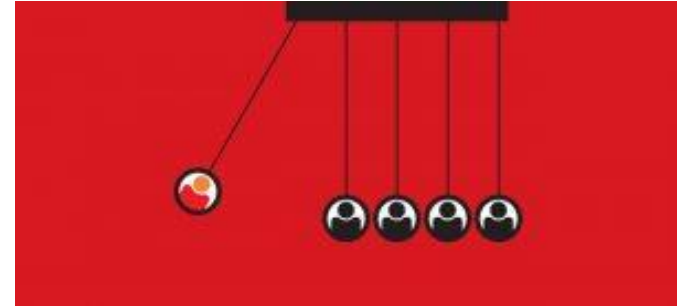


- Frame a mission in terms of customer success / strategic outcomes rather than product.
- Leverage what is unique about your content and data.

- Cultivate scholarly output across the research workflow
- Look for synergies and connections across groups and content types
- Acquire, or partner; remain interoperable
- Hire new skill sets, remembering - Relationship management STILL MATTERS and is a high value activity!
- Balance strategic focus on defensive policy-based activities with proactive innovation leaning into the open ecosystem.
- Participate in standards organizations and industry associations
- Communicate science in the public sector

# Impact

- Assert the integrity of scholarly communication
- Address Societal Challenges
- Measure the Impact of Science on Society





## IV. Assert the integrity of scholarly communication

### **National Geographic Blasts Fake Shark Photo Of The Year, Calls Fake News A Threat And Offers Real Winning Photos**



## IV. Assert the integrity of scholarly communication



Home

The New York Times

WORLD

### *Where Countries Are Tinderboxes and Facebook Is a Match*

False rumors set Buddhist against Muslim in Sri Lanka, the most recent in a global spate of violence fanned by social media.

# IV. Address Societal Challenges



RELX Group SDG Resource Centre" />



Public Policy Statement  
2017-2020


SUSTAINABILITY AND THE CHEMISTRY ENTERPRISE



# IV. Measure the impact of Science on Society

## Policy Citations in PlumX

Below is an example of how Policy Citations look on a PlumX artifact page. The number of policy citations is included in the Citations category. There is a tab that has all of the policy citations listed with the source of the policy. You can click through to both the policy document that cited the research as well as to the policy organization itself.



Sedentary time in adults and the association with diabetes, cardiovascular disease and death: systematic review and meta-analysis.

Citation data: Diabetologia, ISSN: 1432-0428, Vol: 55, Issue: 11, Page: 2895-905  
Publication Year: 2012

USAGE	239	CAPTURES	349	MENTIONS	4	SOCIAL MEDIA	311	CITATIONS	303
Abstract Views	152	Readers	318	Blog Mentions	2	Shares, Likes & Comments	159	Citation Indexes	301
Link-outs	39	Exports-Saves	31	Links	1	Tweets	151	Clinical Citations	2
Clicks	32			News Mentions	1	+1s	1	Policy Citations	3
HTML Views	15								
PDF Views	1								

REVIEW SUMMARY

TWEETS

BLOG MENTIONS

NEWS MENTIONS

WIKIPEDIA


DYNAMED PLUS TOPICS

POLICY CITATIONS

This review has 3 Policy Citations.



**WHO South-East Asia Journal of Public Health**  
Published: April 29, 2016  
Topic: Domestic & Global Health

[Read More](#)




**Aboriginal and Torres Strait Islander health performance framework 2014 report: New South Wales**  
Topic: Domestic & Global Health

[Read More](#)

**Let's get Scotland Walking - The National walking Strategy**  
Published: 2004

[Read More](#)



Scottish Government  
Riaghaltas na h-Alba  
gov.scot

# To maximize the Impact of Scholarly Communication

- Break down barriers
- Build new collaborations involving all stakeholders
- Create sustainable pathways to access
- Develop metrics that reflect a higher level mission

**Thank you! Questions?**

