Open access and the changing face of research

Deborah Kahn, Executive Vice President, BioMed Central

COASP Asia, 2nd June 2014
Research is changing
Key themes

Technologies

Demographics

Collaboration

Massive growth of research output

Trust: Assessing quality

Data, data, data

Openness

Peer review

Impact
Demographics and the dramatic growth of research output

Knowledge, networks and nations
Global scientific collaboration in the 21st century, Report from the Royal Society, 2011
Analysis by Elsevier based on data from Scopus.
## Changing demographics: Article Output 2001-11 by region

<table>
<thead>
<tr>
<th>Country/Region</th>
<th>Articles 2001</th>
<th>Articles 2011</th>
<th>CAGR</th>
<th>Article Share 2001</th>
<th>Article Share 2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern America</td>
<td>322,673</td>
<td>530,304</td>
<td>5.1%</td>
<td>30.8%</td>
<td>23.7%</td>
</tr>
<tr>
<td>Latin America</td>
<td>30,963</td>
<td>86,693</td>
<td>10.8%</td>
<td>3.0%</td>
<td>3.9%</td>
</tr>
<tr>
<td>Western Europe</td>
<td>341,758</td>
<td>580,866</td>
<td>5.4%</td>
<td>32.6%</td>
<td>26.0%</td>
</tr>
<tr>
<td>Eastern Europe</td>
<td>73,321</td>
<td>132,157</td>
<td>6.1%</td>
<td>7.0%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Asia</td>
<td>213,245</td>
<td>695,706</td>
<td>12.6%</td>
<td>20.3%</td>
<td>31.1%</td>
</tr>
<tr>
<td>Pacific</td>
<td>28,869</td>
<td>66,851</td>
<td>8.8%</td>
<td>2.8%</td>
<td>3.0%</td>
</tr>
<tr>
<td>Middle East</td>
<td>27,871</td>
<td>105,397</td>
<td>14.2%</td>
<td>2.7%</td>
<td>4.7%</td>
</tr>
<tr>
<td>Northern Africa</td>
<td>2,563</td>
<td>10,381</td>
<td>15.0%</td>
<td>0.2%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Central Africa</td>
<td>1,952</td>
<td>8,280</td>
<td>15.5%</td>
<td>0.2%</td>
<td>0.4%</td>
</tr>
<tr>
<td>Southern Africa</td>
<td>6,126</td>
<td>17,401</td>
<td>11.0%</td>
<td>0.6%</td>
<td>0.8%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,049,341</strong></td>
<td><strong>2,234,036</strong></td>
<td><strong>7.8%</strong></td>
<td><strong>100.0%</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

The challenges of changing demographics

• Researcher identification
• Language barriers
• Cultural differences
• Pressure on peer reviewers
• Assessing quality and impact
• Gaining visibility of research
Changing demographics: Researcher identification

DISTINGUISH YOURSELF IN THREE EASY STEPS

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Researcher identification

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- Thomas Liao
  Expertise: Pharmaceutical, Biochemical, Molecular Biology, Biomedical and Life Sciences
  How to write and publish your paper (Japanese subtitles)
Assessing quality and impact

• All this growth brings some challenges .....  

Some unscrupulous people are taking advantage of the open access business model to make money out of researchers by publishing anything submitted to them. They have been called “predatory publishers”.

How do you know who to trust?
Principles

Expert Assessment
Collectively, reviewers should have the appropriate knowledge and expertise to assess the proposal both at the level of the broad context of the research field(s) to which it contributes and with respect to the specific objectives and methodology. Reviewers should be selected according to clear criteria.

Transparency
Decisions must be based on clearly described rules, procedures and evaluation criteria that are published a priori. Applicants should receive appropriate feedback on the evaluation of their proposal.

Impartiality
Proposals must be assessed fairly and on their merit. Conflicts of interest must be declared and managed according to defined, published processes.

Appropriateness
The review process should be consistent with the nature of the call, with the research area addressed, and in proportion to the investment and complexity of the work.

Confidentiality
All proposals, including related data, intellectual property and other documents, must be treated in confidence by reviewers and organizations involved in the review process.

Integrity and Ethical Considerations
Ethics and integrity are paramount to the review process.
Promoting integrity in research publication

COPE is a forum for editors and publishers of peer reviewed journals to discuss all aspects of publication ethics. It also advises editors on how to handle cases of research and publication misconduct. Read more about COPE...

FEATURED

New eLearning module launched

"Corrections, retraction and expressions of concern" is the new COPE eLearning module just launched. The module will cover the importance of corrections, retraction and expressions of concern; terms and definitions used; and ways to correct the literature. It can be found on the COPE eLearning page.

Learn more

NEWS & OPINION view all ▶

News / COPE North American seminar 13 August 2014

13/5/2014 4.49pm

Register for COPE's 5th North American seminar, which will be held in collaboration with ISMTE (International Society of Managing & Technical Editors), on Wednesday 13 August 2014 at the Hyatt Regency Philadelphia at Penn's Landing, Philadelphia, Pennsylvania, USA. For more details and to register, see here.

News / COPE Australian 23 June 2014

13/5/2014 2.37pm

COPE is delighted to announce the 3rd Australian Seminar, which will take place at the Karsjens Melbourne Conference Ro Queen Street, Melbourne, on Monday 23 June 2014. The theme of the seminar is "Public ethics from student to professional". For more information and to register, click here.

Cases ▶
Principles of Transparency and Best Practice in Scholarly Publishing

Introduction

The Committee on Publication Ethics, the Directory of Open Access Journals, the Open Access Scholarly Publishers Association, and the World Association of Medical Editors are scholarly organizations that have seen an increase in the number of membership applications from both legitimate and non-legitimate publishers and journals. Our organizations have collaborated in an effort to identify principles of transparency and best practice that set apart legitimate journals and publishers from non-legitimate ones and to clarify that these principles form part of the criteria on which membership applications will be evaluated.

These criteria are largely derived from those developed by the Directory of Open Access Journals. Note that additional membership criteria may also be used by each of the scholarly organizations. The organizations intend to share information in order to develop lists of legitimate journals and publishers. We do not intend to develop or publish a list of publishers or journals that failed to demonstrate they met the criteria for transparency and best practice.

This is a work in progress and we welcome feedback on the general principles and the specific criteria. Background on the organizations is below.
Key things authors need to know about a journal

- Peer review policy
- Impact factor/where it is indexed
- Is the Editor-in-Chief a known and respected name in the field
- Are the authors publishing in the journal known and respected in the field?
- Is the journal a member of COPE?
- Is the Publisher a member of OASPA?
- What are the terms and conditions of publishing?
Results of the “TRUST” project

• Where do researchers choose to publish?

  • Older researchers look for peer reviewed journals published by a society or traditional publisher
  • Younger researchers are looking for highly cited, open access journals published from a country known for the quality of its research.

• Key characteristics of young researchers

  • Much bigger reliance on metrics, impact factors and abstracts. Love quality filters.
  • Expend less effort on finding information in conventional information systems
  • Much more liberal in citation behaviour
  • Much more positive in respect to Open Access publications
  • Happy to disseminate on a wide range of platforms, including social media
  • Social media has a key role in building communities of interest
  • Very pragmatic: take the good with the bad

Changing technologies: New ways of measuring research impact

ImpactStory
Share the full story of your research impact.

ImpactStory is your impact profile on the web: we reveal the diverse impacts of your articles, datasets, software, and more.

Make my impact profile
View a sample profile

San Francisco DORa
Declaration on Research Assessment

PLUM ANALYTICS
DNA barcoding detects contamination and substitution in North American herbal products

Steven G Neumaster, Meghan Orgun, Dikshya Shannugamandhia, Sathishkumar Gomalingam and Subramanyam Ragupathy

Corresponding authors: Steven G Neumaster, neumasters@vgu.edu.vn, Subramanyam Ragupathy, regu@vgu.edu.vn

BMC Medicine 2013, 11:222

Article Metrics

1,151,853
Total accesses

Altmetric score from altmetric.com

Accesses

Last 30 days: 2,551 accesses
Last 365 days: 115,183 accesses

All times: 115,183 accesses

Cited by

- Google Scholar
- PubMed Central
- PubMed Central
DNA barcoding detects contamination and substitution in North American herbal products

The Altmetric score is one measure of the quality and quantity of online attention that this article has received. You can read about how Altmetric scores are calculated here.

This article scored 947.23

The context below was calculated when this article was last mentioned on 20th May 2014

Compared to all articles in BMC Medicine

So far Altmetric has tracked 738 articles from this journal. They typically receive a lot more attention than average, with a mean score of 18.2 vs the global average of 4.0. This article has done particularly well, scoring higher than 99% of its peers. It's actually the highest scoring article in this journal that we've seen so far.

All articles of a similar age

Older articles will score higher simply because they've had more time to accumulate mentions. To account for age, we can compare this score to the 85,524 tracked articles that were published within six weeks on either side of this one in any journal. This article has done particularly well, scoring higher than 99% of its contemporaries.

Other articles of a similar age in BMC Medicine

We're also able to compare this article to 87 articles from the same journal and published within six weeks on either side of this one. This article has done very well, scoring higher than 98% of its contemporaries.

All articles

More generally, Altmetric has tracked 2,161,433 articles across all journals so far. Compared to these this article has done particularly well and is in the 99th percentile: it's in the top 6% of all articles ever tracked by Altmetric.
What happens to journals which convert from subscription to open access?

**Acta Veterinaria Scandinavica**
Year of Transfer: 2006
(First ‘Open Access Impact Factor’: JCR year 2008)

**Journal of Experimental & Clinical Cancer Research**
Year of Transfer: 2008
(First ‘Open Access Impact Factor’: JCR year 2010)

**Journal of Cardiovascular Magnetic Resonance**
Year of Transfer: 2008
(First ‘Open Access Impact Factor’: JCR year 2010)

**Genetics Selection Evolution**
Year of Transfer: 2009
(First ‘Open Access Impact Factor’: JCR year 2011)
Criticisms of peer review

• Slow
• Inconsistent
• Prone to bias
• Open to abuse
• Burden on researchers
• Reviewers can miss things (especially tricky to identify fraud/plagiarism)
Pressure on peer reviewers

The proportion of global reviews completed by the US is much greater than its proportion of global research articles. Ideally, a country should sit on the line - its proportion of world reviews should match its proportion of world papers.

China produces 18% of the world's research articles. Its contribution to global reviews is 6%. However, this low number is not because Chinese researchers are unwilling.

Adrian Mulligan, Research Director Elsevier: The Peer Review Landscape – What do Researchers think?, Nov 2013
Changes in peer review landscape

- Open peer review & credit
- Portable peer review
- Collaborative peer review
- Decoupled peer review
- Peer review of peer review
- Post-publication peer review
Journals with new models

**eLife**
- Highly selective journal backed by HHMI, Max Planck Society and Wellcome Trust
- Reviewing editors lead online discussions resulting in a single concise set of instructions for revisions

**F1000 Research**
- All articles are published within days following an in-house check for obvious inappropriateness
- Peer review takes place immediately after publication; reviews and reviewers’ identities are published alongside articles

**PeerJ**
- Authors pay to become members (starting at $99) instead of paying APCs
- Must commit to providing at least 1 review each year
Conclusions

- Research is changing and scientific publishing is changing with it
- Publishers need to adapt to the changing demographics, both in terms of where researchers are from and the needs of the younger generation of scientists
- Journal quality, and the ability to judge that remains paramount
- Open access can help with the visibility of the content amongst the massive growth of research output
- New forms of peer review and new ways of measuring impact can all contribute to the ability to judge the content of journals
Any questions?

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