PLOS ALM Reports

Harnessing analytics to characterize research impact
Article-Level Metrics at PLOS

ALM: enable the comprehensive analysis of the post-publication activity around a paper, employing usage stats, citations and altmetrics.

http://article-level-metrics.plos.org/alm-info/

Started in 2009 at PLOS, freely available for all PLOS publications

100k articles, 20 data sources
ALMs provide a broader view of article engagement

**Usage**
- PLOS Journals (HTML, PDF, XML)
- PubMed Central (HTML, PDF)
- figshare

**Citations**
- CrossRef
- Scopus
- Web of Science
- PubMed Central
- PMC Europe
- PMC Europe Database Citations
- DataCite

**Altmetrics**
- PLOS Comments
- F1000 Prime
- Mendeley
- CiteULike
- ResearchBlogging
- ScienceSeeker
- Facebook
- Twitter
- Wikipedia
- Reddit
Authors want to see the reach of their publications

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19.14% of article views led to PDF downloads

**Viewed**

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**Cited**

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Readers want to find relevant papers...
... and navigate through the literature

Why Most Published Research Findings Are False
John P. A. Ioannidis

Abstract

There is increasing concern that most current published research findings are false. The probability that a research claim is true may depend on study power and bias, the number of other studies replying on the same findings, whether the studies are cumulative, and whether a larger number of other researchers can or have conducted similar studies. False findings may stem from conscious or subconscious errors in data collection, analysis and interpretation, or from dishonesty.

Summary

Testing by Several Independent Teams

Related PLOS Articles

When Should Potentially False Research Findings Be Considered Acceptable?
Most Published Research Findings Are False—But a Little Replication Goes a Long Way
Minimizing Mistakes and Embracing Uncertainty

Visits: 829,438
Citations: 915
Saves: 4,571
Shares: 5,408
Funders and institutions?

Funders want to monitor the research that they support

Wellcome Trust spends ~ £650 million on research per year. What happens to it?

Médecins Sans Frontières: How do they know the reach of their article?

Institutions want to see how their researchers are making a change

Stanford University: Do administrators and librarians know what research was published by Stanford labs?
Tracking research impact is laborious

- While raw data for individual articles is available, it’s still not easy!
- Aggregate data for all articles? Hard to do
- Follow tweets? Not likely
- News/blog stories? Hard to find correct sources
ALM Reports

almreports.plos.org

A web-based tool for researchers, institutions & funders to:

• Create a report of the latest metrics for a set of PLOS articles
• Examine visualizations that summarize views of the data
Report with real-time data

21. A Prospective Study of Red and Processed Meat Intake In Relation to Cancer Risk
   Amanda J Cross, Michael F Leitzmann, Mitchell H Gail, Albert R Hollenbeck, Arthur Schatzkin, Rashmi Sinha
   Research Article | published 11 Dec 2007 | PLOS Medicine
   10.1371/journal.pmed.0040325

22. Meat Consumption and Cancer Risk
   Jeanine M Genkinger, Anita Kouchik
   Research Article | published 11 Dec 2007 | PLOS Medicine
Aggregate data together into a narrative

Create a report by searching on:
• Keyword
• Author name & country
• Institutional affiliation
• Publication date
• Subject areas
• Funder

And/or add specific articles individually or upload by bulk DOI/PMID
A custom report of research activity

Stanford University + National Cancer Institute

Total usage includes page views and downloads from PLOS and PMC. Bubble size correlates with Scopus citations and bubble color with the PLOS journal.
Stanford University + National Cancer Institute

Total usage includes page views and downloads from PLOS and PMC. Bubble size correlates with Mendeley bookmarks and bubble color with the PLOS journal.

Page views and Mendeley bookmarks over time
Stanford University + National Cancer Institute

Rectangle size correlates with total views (HTML and PDF) from PLOS website. Color intensity correlates with number of Scopus citations.

Article usage and citations by subject category
Geographic map of research collaborations

Geolocation of 1758 authors for 75 articles. Bubble size and color correlates with the number of authors in that location.

SOURCE: 75 published articles from April 04, 2006 to August 29, 2013

Stanford University + National Cancer Institute
Wellcome Trust Case Study

Their findings showed that Wellcome Trust-associated PLOS articles are:

• viewed, saved and cited more often than the average for the biomedical research sector
• discussed by the blogosphere more often than the sector average

http://article-level-metrics.plos.org/files/2013/10/Dinsmore.pptx
For publishers:

- Improve Business Intelligence
- Deepen Editorial Capacities
- Deliver a Richer Product
But beware of dragons

• Data issues = Garbage in, garbage out
• Need structured metadata for cleanest results:
  • Author names
  • Funder names
  • Institution names
• Long-term solution requires:
  • ORCID
  • FundRef
  • Institutional identifier (ex: Ringgold)
ALM Info

General information on ALM

http://article-level-metrics.plos.org/

ALM Reports

http://almreports.plos.org/

Future: ALM Reports will be open source but will have limitations (no search functionality)

ALM Application is Open Source (Ruby on Rails)

https://github.com/articlemetrics/alm

Implementations to date:
• Copernicus Publications
• OJS
• CrossRef Labs
Thank you

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