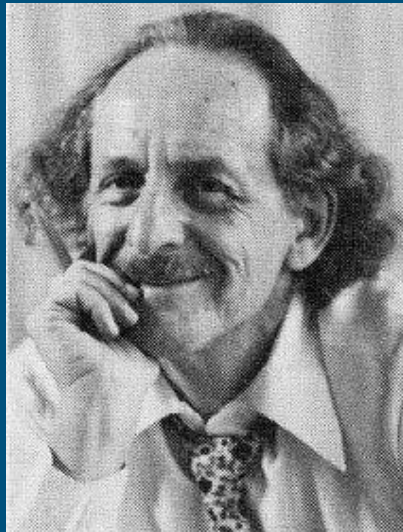




Altmetrics

A look at a moving target...

In the beginning....



...we'll start with Eugene Garfield

Science Citation Index

First published in 1955 in Science, his foundational article “Citation indexes for science. A new dimension in documentation through association of ideas” has been reprinted many times (including [here](#)).

“In effect, the system (citation indexing) would provide a complete listing, for the publications covered, of all the original articles that had referred to the article in question. This would clearly be particularly useful...when one is trying to evaluate the significance of a particular work and its impact on the literature and thinking....Such an ‘impact factor’ may be much more indicative than an absolute count of the number of a scientist’s publications....”

The Science Citation Index launched commercially in 1963, and “impact factor” entered the daily vocabulary of academic librarians everywhere.

What is “impact factor?”

Basically, impact factor as defined measures the # of citations of a journal in the articles from a fixed set of journals. Then, there comes some math to assess the frequency with which the average journal article in that journal will be cited. So, lots of citations = bigger impact factor for the journal.

Web of Science: Journal Citations Reports, Journal Impact Factor (JIF)

Elsevier: Scopus, SCImago Journal Rank and SNIP (Source Normalized Impact per Paper)

As originally developed, “impact factor” is a *journal-level metric*

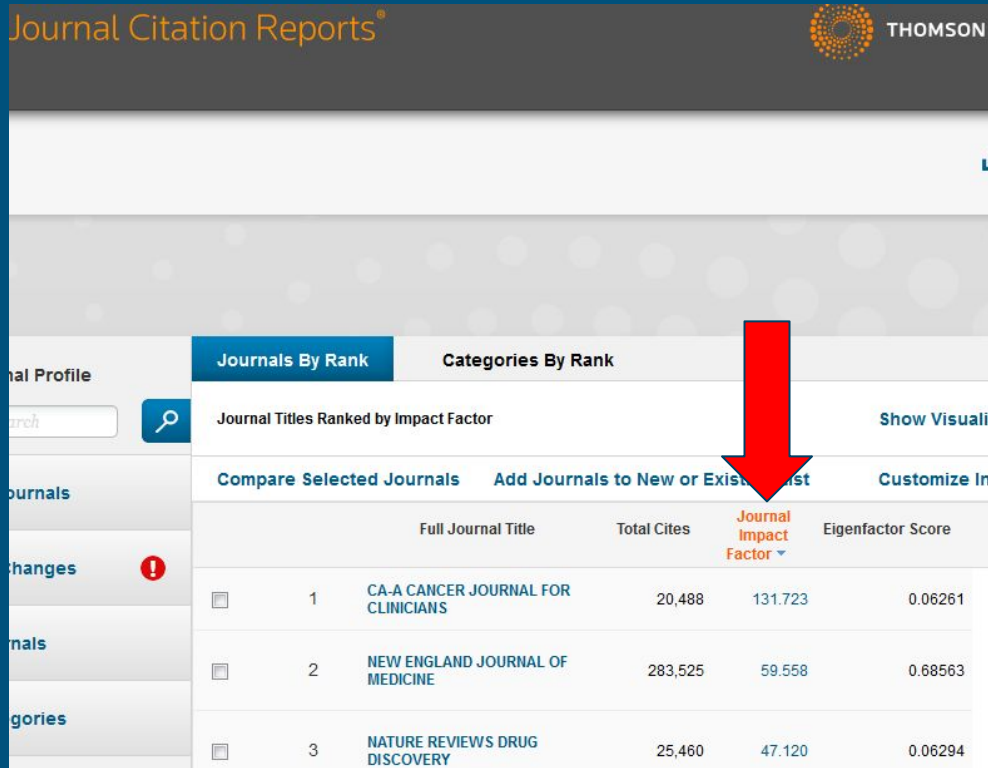
How Publishers Use Impact Factor

Journal marketing....



...and sales.

Journal Impact Factor in Web of Science



Journal Citation Reports® THOMSON I

Journal Titles Ranked by Impact Factor

Compare Selected Journals Add Journals to New or Existing List Customize Info

		Full Journal Title	Total Cites	Journal Impact Factor	Eigenfactor Score
<input type="checkbox"/>	1	CA-A CANCER JOURNAL FOR CLINICIANS	20,488	131.723	0.06261
<input type="checkbox"/>	2	NEW ENGLAND JOURNAL OF MEDICINE	283,525	59.558	0.68563
<input type="checkbox"/>	3	NATURE REVIEWS DRUG DISCOVERY	25,460	47.120	0.06294

...and along comes Hirsch (2005)

h-index is simply an indicator, easily calculated.

It is the largest integer number of papers within a given set of papers that contain at least that many citations

So a researcher having an h-index of 12 in Scopus means that 12 of the papers authored by the researcher have been cited at least 12 times, but that 13 of the papers have not been cited at least 13 times.

H-index is set dependent, therefore.

As originally developed, h-index is a *personal metric*

Finding h-index in Scopus

Scopus [Scopus](#) [SciVal](#) | [MERLIN Library Catalog](#)

[Search](#) [Alerts](#) [Lists](#)

i The Scopus Author Identifier assigns a unique number to groups of documents written by the same author via an algorithm that matches a document with an author identifier, it is grouped separately. In this case, you may see more than 1 entry for the same author.

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Morrison, David C. [About Scopus Author Identifier](#) | [View potential authors](#)

University of Missouri-Kansas City, Department of Basic
Medical Science, Kansas City, United States Other name formats: M
M
M

Author ID: 35591526700

Documents: 242 [Analyze author output](#)

Citations: 8283 total citations by 6304 documents [View citation overview](#)

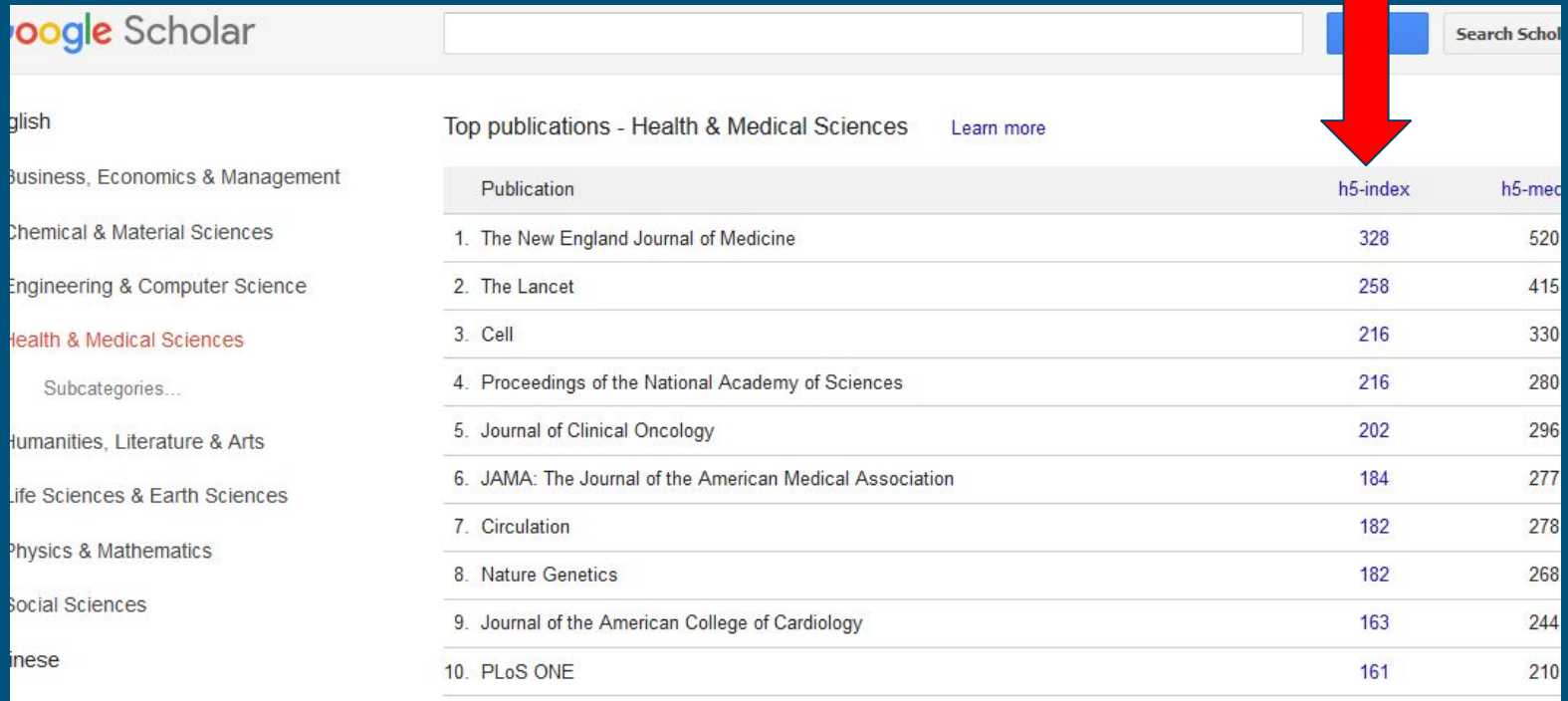
h-index: 47 [View h-graph](#)

Co-authors: 150 (maximum 150 co-authors can be displayed)

Subject area: Immunology and Microbiology , Medicine [View More](#)

242 Documents | Cited by 6304 documents | 150 co-authors

Journal-level h-index in Google Scholar



Google Scholar

Search Scholar

English

Business, Economics & Management

Chemical & Material Sciences

Engineering & Computer Science

Health & Medical Sciences

Subcategories...

Humanities, Literature & Arts

Life Sciences & Earth Sciences

Physics & Mathematics

Social Sciences

Chinese

Top publications - Health & Medical Sciences [Learn more](#)

Publication	h5-index	h5-med
1. The New England Journal of Medicine	328	520
2. The Lancet	258	415
3. Cell	216	330
4. Proceedings of the National Academy of Sciences	216	280
5. Journal of Clinical Oncology	202	296
6. JAMA: The Journal of the American Medical Association	184	277
7. Circulation	182	278
8. Nature Genetics	182	268
9. Journal of the American College of Cardiology	163	244
10. PLoS ONE	161	210

Priem, et al (2010) - Altmetrics: a manifesto

“... that dog-eared (but uncited) article that used to live on a shelf now lives in Mendeley, CiteULike, or Zotero—where we can see and count it. That hallway conversation about a recent finding has moved to blogs and social networks—now, we can listen in. The local genomics dataset has moved to an online repository—now, we can track it. This diverse group of activities forms a composite trace of impact far richer than any available before.”

So, What is Altmetrics?

According to [NISO](#),

“Altmetrics is a broad term that encapsulates the digital collection, creation, and use of multiple forms of assessment that are derived from activity and engagement among diverse stakeholders and scholarly outputs in the research ecosystem.

The inclusion in the definition of altmetrics of many different outputs and forms of engagement helps distinguish it from traditional citation-based scholarly metrics. At the same time, it leaves open the possibility of the complementary use of those traditional measurements for purposes of gauging scholarly impact. However, the development of altmetrics in the context of alternative assessment sets its measurements apart from traditional citation-based scholarly metrics.”

Whew!

...Or...

Altmetrics are measures that look at scholarly and research impact other than through “traditional” citation counting/impact factors.

Altmetrics can be measured for *individual articles, researchers/authors*, or at the *journal* level.

The NISO document [Altmetrics Definitions and Use Cases](#) presents several scenarios where different stakeholders may want to use altmetrics.

Types of Altmetrics

A [2012 blog post](#) at [ImpactStory](#)* suggested that altmetrics fall into the following types or categories:

	scholars	public
recommended	citations by editorials, f1000	press article
cited	citations, full-text mentions	wikipedia mentions
saved	citeulike, mendeley	delicious
discussed	science blogs, journal comments	blogs, twitter, facebook, etc.
viewed	pdf downloads	html downloads

*more on this company later!

Article-Level Metrics (ALM) altmetric tools

Following the analysis of Merlo (2015) in his article "[Altmetrics - a complement to conventional metrics](#)," we'll briefly discuss four tools being used to gather altmetrics at the article-level. This level of gathering is important for researchers interested in the significance of their work.

- [ALM - PLoS One](#)
- [Altmetric](#)
- [ImpactStory](#)
- [Plum Analytics](#)

Example of ALM in PLoS One

PLOS ONE

Publish About Browse Search

advanced search

OPEN ACCESS PEER-REVIEWED

RESEARCH ARTICLE

A New Metabolomic Signature in Type-2 Diabetes Mellitus and Its Pathophysiology

Inken Padberg, Erik Peter, Sandra González-Maldonado, Heide Witt, Matthias Mueller, Tanja Weis, Bianca Bethan, Volker Liebenberg, Jan Wiemer, Hugo A. Katus, Dietrich Rein, Philipp Schatz

Published: January 17, 2014 • <http://dx.doi.org/10.1371/journal.pone.0085082>

55 Save	16 Citation
6,723 View	3 Share

Article Authors Metrics Comments Related Content

Abstract Introduction Materials and Methods

Abstract

Download PDF Print Share

CrossMark

Subject Areas

Click on “Metric” for more detail...

Viewed ?

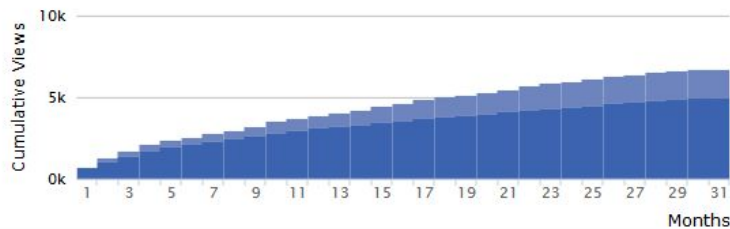
Total Article Views

6,723

Jan 17, 2014 (publication date)
through Jul 13, 2016 *

	HTML Page Views	PDF Downloads	XML Downloads	Totals
PLOS	3,993	915	31	4,939
PMC	1,143	641	n.a.	1,784
Totals	5,136	1,556	31	6,723

30.30 % of article views led to PDF downloads



■ Compare average usage for articles published in 2014 in the subject area: ?

Biology and life sciences



[Show reference set](#)

*Although we update our data on a daily basis, there may be a 48-hour delay before the most recent numbers are available. PMC data is

Key features of ALM-PLoS

Metrics in five categories: Viewed, Saved, Discussed, Recommended, Cited (cited is, of course, a “traditional” metric)

Visualizes article usage as a function of age where possible

Application Programming Interface (API) is freely and publicly available















Altmetric for Altmetrics

Confusingly, a leading tool for altmetrics is [Altmetric](#).

One Altmetric's key visualizations is the [Altmetric Attention Score](#), graphically represented as a donut with bands of varying width representing different types of attention received by the research output.



Altmetric Attention Score Donut Colors

 Policy documents	 Google+
 News	 LinkedIn
 Blogs	 Reddit
 Twitter	 Faculty1000
 Post-publication peer-reviews	 Q&A (stack overflow)
 Facebook	 Youtube
 Sina Weibo	 Pinterest
 Wikipedia	

Key features of Altmetric

Aggregates data from social media, “traditional” media (including popular and professionally specific), and online reference managers

Has been adopted by Springer, Nature Publishing Group, BiomedCentral, and other publishers

Is one of the data sources used in ImpactStory


Altmetric is a for-profit entity; Application Programming Interface (API) available for fee that covers the entire application, while non-commercial license available for reduced API to retrieve basic altmetrics data


What is Impactstory?

Impactstory is a web service “...that helps researchers explore and share the the online impact of their research. By helping researchers tell data-driven stories about their work, we're helping to build a new scholarly reward system that values and encourages web-native scholarship.”

Impactstory is a 501(c)(3) non-profit with funding from the Alfred P. Sloan Foundation and the National Science Foundation

My Impactstory page

 **Impactstory**




Scott Curtis

University of Missouri Kansas City University Libraries Federal Depository Library Program Coordinator

👤 1 👤 1 🔒 1

OVERVIEW ACHIEVEMENTS ACTIVITY PUBLICATIONS


ACHIEVEMENTS view all



Global Reach

Your research has been saved and shared in 5 countries.


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Greatest Hit

Your top publication has been saved and shared 7 times.

📄 Your greatest hit online is [Informing collection development through citation examination of the civil engineering research literature](#).






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Your writing has a reading level that is easily understood at grade 9 and above, based on its abstracts and titles. That's great — it helps lay people and practitioners use your research. It also puts you in the top 5% in readability.

ACTIVITY

23 Saves and shares across 3 channels: 18 4 1

PUBLICATIONS

-  [Informing collection development through citation examination of the civil engineering research literature](#)
2011 ASEE Annual Conference and Exposition, Conference Proceedings
7 📄
-  [Enhancing Teaching and Learning in the 21st-Century Academic Library: Successful Innovations that Make a Difference](#), ed. Bradford Lee Eden. New York: Rowan & Littlefield, 2015. 214p. Paper, \$45.00 (ISBN 978-1442247055). LC 2014043551.
2016 *College & Research Libraries*
5 📄 📄 📄
-  [Racetrack for competing viscous fingers](#)

Achievements like...



Big in Japan

Your work was saved or shared by someone in Japan! Only half of researchers can claim this honor.

[link](#) [share](#)

Key features of Impactstory

Commitment to free and open data (to the extent researchers make it possible)

Co-founded by Jason Priem, who coined “altmetrics” and wrote the Altmetrics Manifesto

API code is open for development on GitHub

Search other researchers' Impactstory by using ORCID number

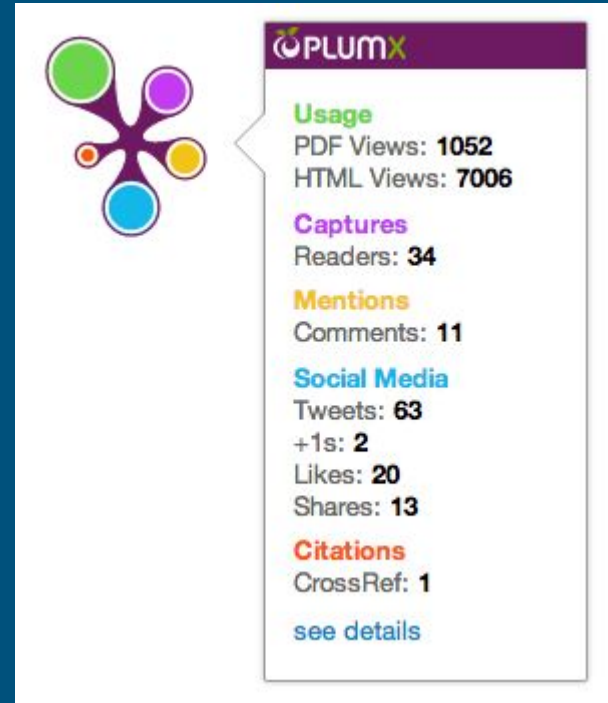
Metrics using Plum Analytics

Here's an example of a PlumPrint from Plum Analytics:

Notice measures beyond citations like

- Usage in HTML/PDF views
- Comments/Mentions on social media
- Citation metrics from CrossRef

Here's a blog post on [PlumX within CINAHL](#).



Key features of Plum Analytics

Metrics in five categories: Usage, Captures, Mentions, Social Media, and Citations

Plum Analytics is a for-profit entity owned by EBSCO, with a suite of products tailored for individual researchers, research groups, and institutional repositories

What do Researchers Want from Metrics?

Care a lot about making tenure/promotion

- Want to publish in journals that will appeal to their tenure/promotion committee
- Want their articles to be viewed as significant contributions to the field

Care a lot about applying for grants - getting money for research

- Want to publish in journals that will appeal to granting agencies
- Want granting agencies to see the value of their articles based on grant funding

Care a lot about what colleagues think

- Want to publish articles that their peers regard highly

Are altmetrics good metrics?

“...it’s not the collaboration, it’s the ego, stupid! Ego moves Academia.”

“Self-tracking can be a means of taking control, a strategy for empowering by making contributions visible, or to contest auditing done by others...Enacting research as a game might however lead to other, less desired, consequences. Similarly to evaluation systems, a further focus on gathering points ...might lead to goal displacement where the aim of doing sound and relevant research is superseded by the effort of gathering more points.”

“Informed with the strengths and limitations of the tools and data available, researchers can construct more comprehensive portfolios and richer narratives of the ways in which their scholarship is diffused and the impact it has on society. With proper understanding, altmetrics can help to tell this story.”

Discussion/Questions

Resources

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Thank you!

