Sharing & Promoting Your Research

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Today’s Objectives

- Participants will gain a better understanding of the principles and uses of traditional metrics and how they are used in academia.
- They will gain a better understanding of non-traditional metrics or “altmetrics.”
- They will learn methods for sharing and promoting their research as well as collecting metrics data.
- Participants will be introduced to the available library services and resources that aid in research promotion.
Intro to metrics

- What do we mean by scholarly metrics?
- Citation counting as the foundation on which traditional metrics built
- With growing criticism of journal impact factors, alternative metrics on the rise
- Metrics being used in new ways
Context is Key

- Any metric is determined by the universe of data that is used to calculate it.
- That universe of data must consist of comparable data points if the metric is to have any meaning.
- Even with comparable data points, care is required in interpreting and using the metric.
For example...

Scopus

Johnsen, Sönke J.
Duke University, Department of Biology, Durham, United States
Author ID: 7102804988

Documents: 78
Citations: 1415 total citations by 1105 documents
h Index: 19 The h Index considers Scopus articles published after 1995.

References: 2690
Co-authors: 101

Subject area: Agricultural and Biological Sciences, Biochemistry, Genetics and Molecular Biology

Web of Science

Results found: 94
Sum of the Times Cited [?]: 819
Sum of Times Cited without self-citations [?]: 710
Citing Articles: [?]: 660
Citing Articles without self-citations [?]: 619
Average Citations per Item [?]: 8.71
h-index [?]: 14
There are many proprietary sources of data for metrics.

ISI are the originators of Impact Factor and many other metrics, and are often the assumed data source if not specified.

ISI is not the only game in town (Scopus, Google Scholar...).
Journal Metrics

- Impact Factor (IF) & 5-Year Impact Factor
- Immediacy Index
- Cited Half-Life
- Eigenfactor & Article Influence
- SCImage Journal Rank (SJR)
- Source-Normalized Impact per Paper (SNIP)
- h5-index (don’t confuse with h-index for authors)
- Usage Factor (UF)
number of citations to articles published in that journal in the last two full years divided by number of citable articles published in the last two full years

For example, the 2013 impact factor would be calculated as:

\[
\frac{\text{(citations to articles published 2011-2012)}}{\text{(citable articles published in 2011-2012)}}
\]
Impact Factor

- A measure of how highly cited the journal is
- Can be gamed by editorial decisions
- Widely misused
- Not for new journals

Fig 1: A journal's impact factor is a good predictor of its five-year median of citations to primary research articles.

Weighted & Normalized Metrics

- **Eigenfactor**
  - Citations weighted by rank of citing journal
  - Influenced by size of journal (many articles published = high Eigenfactor)
- **SCImago Journal Rank (SJR)**
  - Citations weighted by rank of citing journal
  - Inspired by PageRank algorithm
  - Size-independent (“average prestige per article”)
- **Source-Normalized Impact per Paper (SNIP)**
  - Weights citations by field of research
Immediacy & half-life

- **Immediacy Index**
  
  \[
  \text{Immediacy Index} = \frac{\text{number of times articles published by the journal in a given year were cited in indexed journals during that same year}}{\text{number of citable articles published by the journal in that year}}
  \]

- **Cited Half-Life**

  the median age of the articles that were cited from a given journal in a given year
Article-level metrics

- Citation count
- Views and downloads
- Social media bookmarks and mentions
- Media coverage

As always:

- Data source determines value
- Must be put in context
For example...

### How Many Species Are There on Earth and in the Ocean?

Camilo Mora, Derek P. Tittensor, Sina Adl, Alastair G. B. Simpson, Boris Worm

Published: August 23, 2011 • DOI: 10.1371/journal.pbio.1001127 • Featured in PLOS Collections

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12.22% of article views led to PDF downloads

**Related PLOS Articles**

- Why Worry about How Many Species and Their Loss?

**Included in the Following Collection**

- PLoS ONE: The FMAP
For example...

Article metrics for:

Beware the impact factor

*Nature Materials* 12, 89 (2013)  |  doi:10.1038/nmat3566

Last updated: 27 March 2014 4:3:42 EDT

**Total citations**

- Data not available
- CrossRef: 1
- Scopus: 2

**Online attention**

Altmetric score (what's this?):

- Tweeted by 362
- On 11 Facebook pages
- Mentioned in 4 Google+ posts
- Blogged by 2

This Altmetric score means that the article is:

- in the 99 percentile (ranked 554th) of the 231,664 tracked articles of a similar age in all journals
- in the 98 percentile (ranked 1st) of the 55 tracked articles of a similar age in *Nature Materials*

Page views: 43,522
Altmetrics

- Article/publication/item-level metrics outside of traditional citation count
- Items can be articles or other published works
- Meant to capture more of the informal conversation around a work, faster moving than peer-review publication process
- Altmetrics altmetric.com
Author/researcher metrics

- Publication count and total citation count
- h-index
- g-index

- Data source is important (again and always)
- Gathering all publications under all forms of name, and distinguishing between authors with same or similar names are nontrivial problems, but available data are much improved. (The library can help you here too!)
h-index

An author with an index of $h$ has published $h$ papers each of which has been cited in other papers at least $h$ times.

*Can only be compared within a research field.
g-index

Given a set of articles ranked in decreasing order of the number of citations that they received, the g-index is the (unique) largest number such that the top g articles received (together) at least $g^2$ citations.
Gaming the system

- Editors can game impact factors and authors can manipulate citations, views, etc.
- Some metrics and some data sources are more resistant to tampering than others
- Important because it also reveals what behaviors are being incentivized
A bit more on context

- Scores shift over time, not necessarily due to gaming
- Changes in scholarly practice, such as longer references lists

The big picture for scholarship

- We measure what is possible/easiest to measure.
- What we measure becomes what we value.
- So where are we headed now?
Use of metrics

● By university departments for hiring and promotion decisions
● By researchers for self-promotion, staying informed, identifying collaborators, seeking funding, and reporting to funders
● By university administration for evaluation, comparison, strategic planning, and public relations
● By funders?
Skepticism and backlash

- Journal Impact Factor has been under fire for decades now
- Easy to find diatribes against any given metric
- The problem may not be with the metrics themselves, but with inappropriate applications of them, especially in high stakes decision making
San Francisco Declaration on Research Assessment

“Do not use journal-based metrics, such as journal impact factors, as a surrogate measure of the quality of individual research articles, to assess an individual scientist’s contributions, or in hiring, promotion or funding decisions.”

“...make assessments based on scientific content rather than on publication metrics.”

doi.org/10.1242/dmm.012955
Working with metrics

- Library subscribed databases: Web of Science (and JCR), Scopus, and more
- Journal-provided ALMs: PLOS has been a leader, now common
- Paid services: altmetric.com (Digital Science), Plum Analytics (EBSCO)
Sharing your research

- Author ID’s
- Profiling
- Networking
- Other Cool Tools
Sharing your research: Author ID’s

ORCID
ResearcherID (WoS)
Sharing your research: Profiling

My Bibliography & SciENcv
VIVO profile/Scholars @ Duke
Google Scholar
Impactstory
Sharing your research: Networking

ResearchGate
Academia.edu
LinkedIn

Facebook, Twitter, Instagram...
Sharing your research: Other Tools

PubMed Commons
Figshare
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the Library can help!

919-660-1100
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https://mclibrary.duke.edu/

Link to this presentation:
http://tinyurl.com/resweds0514
Thanks!

Questions?

**Special thanks to Elena Feinstein, Librarian for Chemistry & Biological Sciences, for sharing her presentation materials with us for use in this presentation.**