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ALTMETRICS:

What is it and how is it relevant to
librarians?

Cross Timbers Library Collaborative
Scholarly Communications & Digital Curation Affinity Group Meeting
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THE DECLINE OF JOURNAL-BASED METRICS

“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.”

-Recommendation #1

San Francisco Declaration on Research
Assessment, December 2012

<http://am.ascb.org/dora/>



OUTLINE FOR TODAY'S TALK

- Traditional Metrics & Their Limitations
 - Globalized & Networked Research
 - Altmetrics: What is it?
- Implications of altmetrics for researchers and librarians
 - Limitations of altmetrics
 - Examples of altmetrics

MEASURING IMPACT

- Peer review
- Citation counting
- Journal impact factor

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Meteor Crater Aerial View



FLAWS IN TRADITIONALLY USED MEASURES OF SCHOLARSHIP

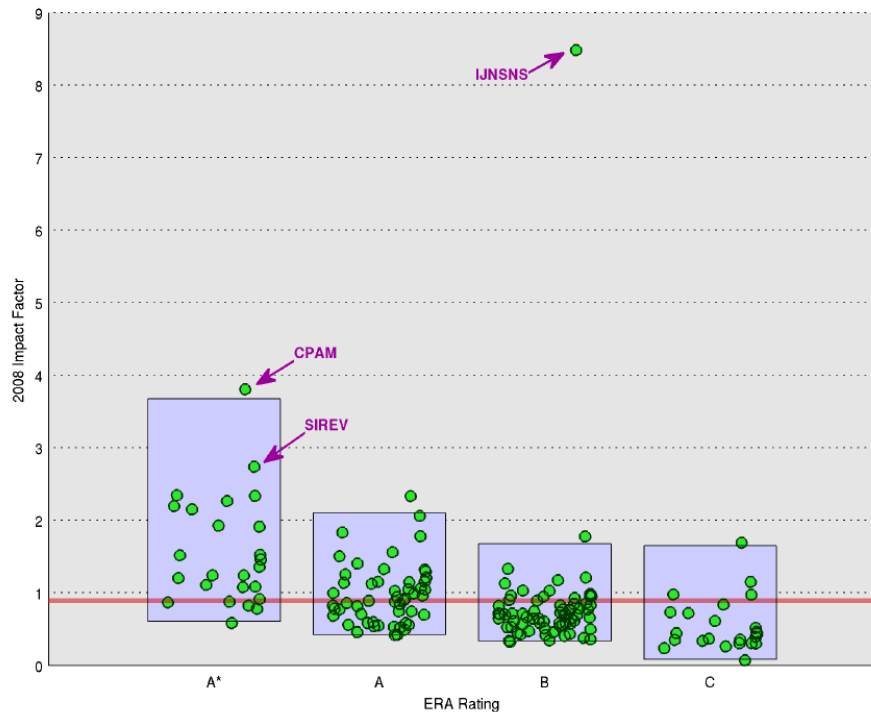


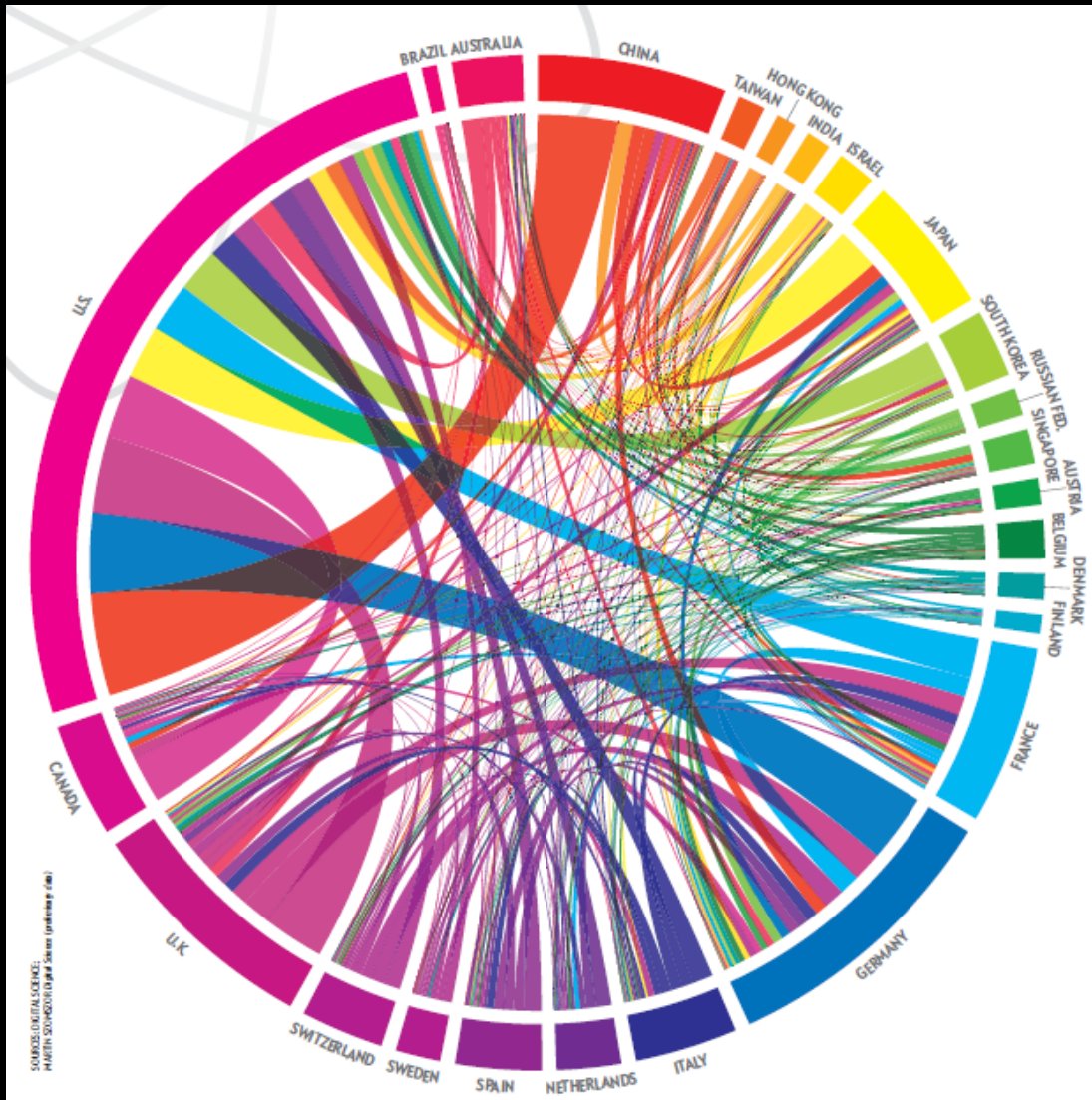
FIGURE 1. 2008 impact factors of 170 applied math journals grouped according to their 2010 ERA rating tier. In each tier, the band runs from the 2.5th to the 97.5th percentile, outlining the middle 95%. Horizontal position of the data points within tiers is assigned randomly to improve visibility. The red line is at the 20th percentile of the A* tier.

“When a measure becomes a target, it ceases to be a good measure.”

- Goodhart’s Law

Arnold, D. N. and Fowler, K. K. (2010). Nefarious numbers. Retrieved from <http://arxiv.org/abs/1010.0278>

GLOBALIZED & NETWORKED RESEARCH



This circular graph shows collaboration among the 25 nations with the largest science output, as measured in scientific papers that appeared in 2011 in a select group of journals. Not included are collaborations that took place inside each country.

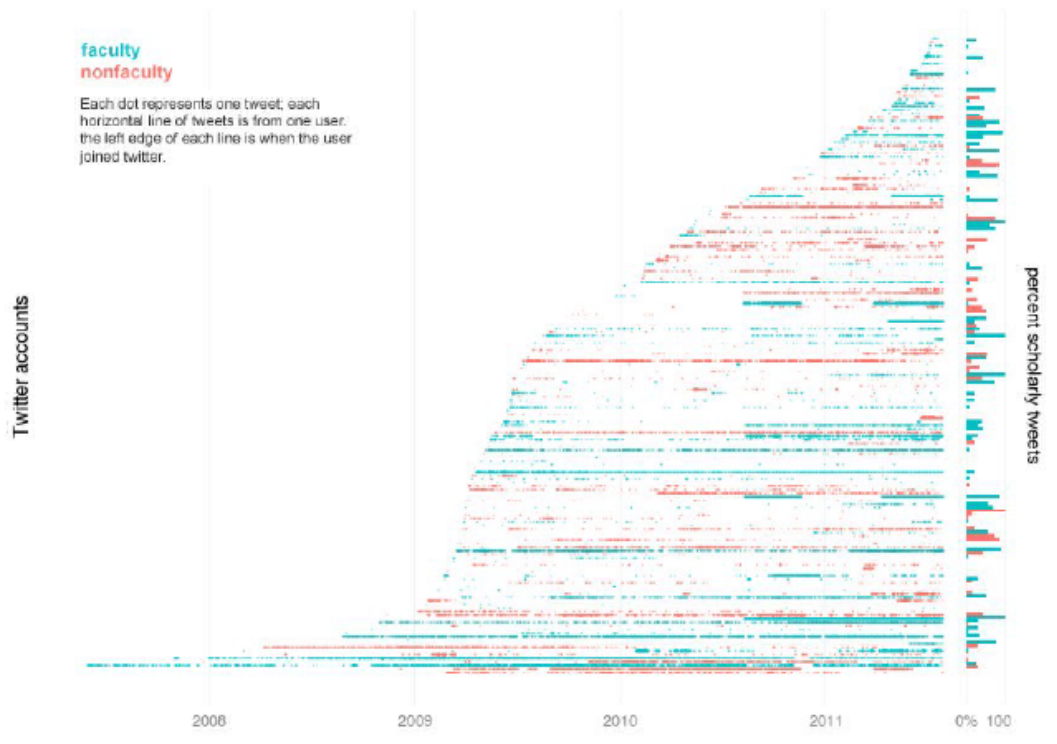
CREDIT: *Sven Laqua and Arno Ghelfi*,
SOURCES: DIGITAL SCIENCE; MARTIN SZOMSZOR
Digital Science (preliminary data)

Sexton, J. (2012). State of the world's science. *Scientific American*, 307(4):36-40.

© *Scientific American*

NETWORKED RESEARCH

Cumulative growth in the number of scholarly Twitter accounts.



Prevalence and use of Twitter among scholars.

Priem (n.d.). First-year graduate students just wasting time? Retrieved from <http://jasonpriem.org/self-archived/twitter-scholars-poster-abstract.pdf>

Twitter is a scholarly communication medium.

Several studies have presented evidence of scholars using the service to enrich academic conferences as well as cite scholarly literature; as many as $\frac{1}{3}$ of tweets from scholars contain scholarly content.

Priem, J., Piwowar, H. A., and Hemminger, B. M. (2012). Altmetrics in the wild: Using social media to explore scholarly impact. Retrieved from <http://arxiv.org/html/1203.4745v1>

VARIETIES OF RESEARCH



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The impact of a research paper has a flavour. It might be champagne: a titillating discussion piece of the week. Or maybe it is a dark chocolate mainstay of the field. Strawberry: a great methods contribution. Licorice: controversial. Bubblegum: a hit in the classrooms. Low-fat vanilla: not very creamy, but it fills a need.

[Heather Piwowar "31 Flavors Of Research Impact Through #Altmetrics"](#)

VARIETIES OF RESEARCH



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We have come to see blogging as a variation of open access publishing. Academics can get to print early, share ideas which are still being cooked and stake a claim in part of a conversation without waiting to appear in print. On blogs we can offer commentary on the work of others in a more relaxed - or opinionated - way than we might do in conventional journals, where we will be subjected to the normalising gaze of peer reviewers.

[Why do academics blog? It's not for public outreach, research shows](#)

WHAT IS ALTMETRICS?

How many times an output

- article, website, blog, dataset, grey literature, software, etc

has been:

- Viewed (Publisher websites, Dryad)
- Downloaded (Slideshare, publisher websites, Dryad)
- Cited (PubMed, CrossRef, Scopus, Wikipedia, DOI, Web of Science)
- Reused/Adapted (Github)
- Shared (Facebook, Twitter)
- Bookmarked (Mendeley, CiteULike, Delicious)
- Commented upon (Twitter, Mendeley, blogs, publisher websites, Wikipedia, Faculty of 1000)

ALTMETRICS

	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

Piowar, H. and Priem, J. (2013). The power of altmetrics on a CV. *Bulletin of the American Society for Information Science and Technology*, 39(4):10-13. Retrieved from http://www.asis.org/Bulletin/Apr-13/AprMay13_Piowar_Priem.html

CHARACTERISTICS OF ALTMETRICS

Creative Commons (CC-BY-SA) image courtesy Jason Priem from <http://altmetrics.org/manifesto/>

- Diverse
- Granular
- Fast
 - Uses public APIs to gather data in days or weeks
- Open
 - both the scripts and the algorithms that collect it
- Suited to measuring social reach in online environments



IMPLICATIONS OF ALTMETRICS FOR RESEARCHERS

- Offers additional measures of influence
- Can deliver information about impact of the research output itself (not just its venue)
 - On diverse audiences like clinicians, practitioners, and the general public
 - Of influential, but uncited work
- Tracks use of diverse research output

IMPLICATIONS OF ALTMETRICS FOR RESEARCHERS

- As a filter & discovery tool
- Less risk in publishing in experimental formats
- Junior researchers & those in emerging disciplines can still show research impact
- Altmetrics is still a very young field!



Portrait of a Scholar
- Rembrandt

Public domain image courtesy
Wikimedia

WHY IS THIS RELEVANT TO LIBRARIANS?

- Supports our role as **scholarly communications specialists & communication partners** with researchers
 - Moving towards a more integral role in research process
 - Helping faculty understand their own impact
- Altmetrics may be integrated into the IR
- Additional information to make collection management and acquisitions decisions
- Fulfills learning support/information literacy function

LOTS OF QUESTIONS TO BE ANSWERED

- How susceptible are altmetrics to gaming?
- How do we determine the motives of users engaging in the social activities that altmetrics measures?
 - Otherwise stated: How do we get at the qualitative understanding underlying the quantitative measurements?
- How do we account for the ephemeral nature of social media platforms, many of which quickly rise to prominence and fade away into disuse?
- How do altmetrics indicators relate/correlate?
- How do altmetrics work with disciplines that do not publish articles?
 - Humanities and other disciplines that communicate primarily via book publication
 - Applied scientists doing translational research

ESPECIALLY USEFUL REFERENCES

Articles:

- Galligan, F. and Dias-Correia, S. (2013). Altmetrics: Rethinking the way we measure. *Serials Review*, 39(1):56-61. <http://dx.doi.org/10.1016/j.serrev.2013.01.003>
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- Torres-Salinas, D., Cabezas-Clavijo, A., and Jimenez-Contreras, E. (2013). Altmetrics: New indicators for scientific communication in web 2.0. *Comunicar*, 21(41):53-60. Retrieved from <http://arxiv.org/pdf/1306.6595>

Video:

- Konkiel, Stacy: [OCLC Innovations in Libraries 2012 Altmetrics App Review](#)
- Priem, J., Holmes, K., and Aptowicz Trasande, C.: [Columbia University Speaker Series: Measuring Scholarly Impact](#)

See a longer list of scholarly references used for this presentation at <http://www.citeulike.org/user/ciakov/altmetrics>

And bookmarked list of blogs & websites at <https://delicious.com/ciakov/altmetrics>

EXAMPLES OF ALTMETRICS



ImpactStory.

<http://president-icinghower.tumblr.com/>

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