

# FREE

## Faculty Resources for Educational Excellence



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## What are research impact metrics?

### Understanding Bibliometrics and Altmetrics.

by **Kyrille DeBose**, *MLIS Director, Health Sciences Libraries; Head, Veterinary Medicine Library & Liaison to Animal Sciences; Associate Professor Virginia-Maryland College of Veterinary Medicine, Virginia Tech*

### What are research impact metrics?

Faculty spend countless hours of their professional lives working in the realm of research. While it is relatively easy to calculate the amount of time and money spent on these endeavors, it is much harder to quantify the actual impact, influence, or effect that research has had on the broader scientific and public communities. While far from being perfect or a “one-size fits all” solution, research impact metrics have been developed to provide a mechanism by which to measure the impact of a specific article, author, or journal title, as well as across larger groups such as departments, publishers, and institutions. Each metric has benefits and drawbacks, can be misused if not understood, and new metrics continue to be developed to address contextual gaps or other deficiencies observed to be present when trying to quantify primarily subjective and qualitative data.

### Bibliometrics

The term bibliometrics is used to describe the statistical analysis of a given work and is most often applied to journal articles. These metrics are first used to determine the research impact of a specific article, and those metrics are subsequently used in calculations related to the research impact of the article’s corresponding authors and the importance of the journal where the article was published.

The number of times a work has been cited is used to determine the impact of that specific article, but accurately counting the number of times an article has been cited is extremely challenging. Additionally, the citation count by itself does not provide the context as to who cited or why the work was cited. These contexts provide insights into the actual impact of the work beyond just the number. For researchers, these two metrics are used to determine the author's h-index, and for journals, they are used to determine the Impact Factor (IF).

## Altmetrics

Altmetrics ("alternative metrics") were developed to quantify the impact or influence of a work without relying on citation counts. Altmetrics rely on using scripts to gather several types of data, including how many times a paper is viewed, downloaded, discussed, shared, and stored in reference managers, from online outlets such as websites, news organizations, and social media. However, much like bibliometrics, altmetrics have their own sets of drawbacks. Initial excitement can inflate the appearance of the impact of a work, as can self-citation and other methods employed to game the system. Additionally, these metrics gather data from non-scholarly entities, and online popularity does not necessarily equate scientific relevance or value.

Publishers have started to offer altmetrics data on their sites, and promotion and tenure committees are looking at examining both traditional bibliometrics and altmetrics to measure how the works of the author are being used inside and outside of academic settings.

## How to report bibliometrics and altmetrics?

When it comes to promotion and tenure reviews, faculty must determine how to contextualize these metrics using the contents of the dossier. While still relatively early in adoption, including both bibliometric and altmetrics data as part of a narrative CV provides a mechanism for faculty to offer insightful context regarding the impact and influence of their work that goes beyond just listing their citations.

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## For more information

**Rachel Miles, MLS**, the Research Impact Coordinator for the University Libraries, created and maintains the following resource guides regarding bibliometrics and altmetrics, and methods for capturing and reporting these types of data:

- [Impact Metrics](#)
- [Narrative CVs](#)
- [Scholarly Profiles](#)
- [Tell Your Story](#)

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