

# American University Tenure, Promotion, and Reappointment Guidelines Updates

## ***Resource 9*** **IMPACT METRICS**

This resource provides a highly condensed introduction to several vital issues associated with the measurement of scholarly<sup>1</sup> impact. The first section offers ideas for capturing impact on audiences beyond other experts in our academic fields and disciplines. The second section discusses existing measures of scholarly impact and offers several ways of addressing their weaknesses.

We are fortunate to have a national expert on these issues on campus. Thanks go to Science Librarian Rachel Borchardt, Associate Director of Research and Instructional Services at the University Library, for preparing this resource.

### **Impact Measures Associated with Non-scholarly/Quasi-scholarly Audiences**

This guidance includes qualitative and quantitative impact indicators. Some are collected through alternative sources, namely [Altmetric](#), while others must be gathered or documented manually. These indicators are not comprehensive, and neither is the list of audiences. Both are meant to illustrate appropriate ways to document impact on a sample of different audiences. Schools, departments, and/or individual faculty may wish to create their own lists of impact audience(s) or impact type(s): for example, the [Becker Model](#) outlines 5 types of impact<sup>2</sup> within biomedical sciences, while the [framework for academic librarianship](#) details measures for scholarly and practitioner impact.

### **Sample of Potential Non-scholarly/Quasi-scholarly Audiences with Suggested Metrics**

1. Educators or other applied practitioners (journalists, healthcare workers, corporate and industry employees, etc.)
  - a. Impact factors may include evidence of application or use of scholarship including a wide variety of altmetrics (downloads, views, shares, etc.) and qualitative measures (emails, inclusion in syllabi, awards or recognition, etc.) that demonstrate engagement.
  - b. Research outputs may also be tailored for this audience, e.g., lesson plans, trade publications, presentations, or outreach.
2. Policymakers (government officials/groups/agencies/etc., think tanks, intergovernmental organizations such as WHO or UN, etc.)

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<sup>1</sup> In this and related documents, the terms scholarly and scholarship always include research, creative, and professional activities and outputs, as per the *Faculty Manual's* glossary.

<sup>2</sup> The 5 types are Advancement of Knowledge, Clinical Implementation, Community Benefit, Legislation and Policy, and Economic Benefit.

- a. Impact factors may include evidence of application or use of scholarship primarily in the form of citations within policy and policy-related documents (websites, policy papers, etc.) that demonstrate influence.
  - b. Research outputs may also be tailored for this audience, e.g., congressional testimony, policy papers, presentations, outreach, or communication.
3. Community, including community service
- a. Impact factors may include evidence of application or use of research outputs, including a wide variety of altmetrics (downloads, views, shares, etc.) and qualitative measures (emails, continued community engagement, awards or recognition, etc.) that demonstrate engagement.
  - b. [SMART goals](#) may also demonstrate measurable impact, depending on the nature of the research/community engagement.
  - c. Research outputs may also be tailored for this audience – e.g., websites, visualized data, guides, or other forms of knowledge sharing.
4. General public
- a. Impact factors may include evidence of interaction with research outputs, including a wide variety of altmetrics (social media mentions, shares, views, downloads, media mentions, etc.) that demonstrate attention and reach.
  - b. Research outputs or related media may also be tailored for this audience, e.g., films, videos, interactive media, exhibits, infographics, press releases, news articles, opinion pieces, blogs, or other social media posts.

## **Impact Measures for Scholarly Disciplines**

Schools/departments should consider adopting a broad range of impact measures appropriate to the research outputs, impact audiences (above), and metrics relevant for their discipline(s), in addition to recognizing that research beyond the school/department’s primary research discipline may require different metrics, especially in the case of cross-disciplinary work.

Some schools and departments may also wish to exclude metrics from consideration. For example, the [American Mathematical Society](#) has stated its rejection of impact factor for research evaluation due to its unhelpfulness in providing meaningful evaluation for several reasons. These reasons, such as poor coverage, a lack of time dependence, and relatively low citation rates, also apply for many non-STEM fields. Some fields, such as [political science](#), publish updated journal lists based on peer consensus of journal quality, but these lists can also serve to reinforce existing narratives and power dynamics. In short, measurements of journal quality can reinforce existing biases within the research enterprise and should only be used in conjunction with other evaluative criteria, or abandoned entirely, rather than forming the sole basis of evaluation.

Some general principles to consider include:

### **Journal-Level Metrics**

1. [Journal-level metrics](#), including Impact Factor, SJR, CiteScore, and H-5-index, have historically been used to indicate journal quality within a field or discipline, but also serve as gatekeepers

and reinforcers of existing power inequalities within academic publishing. Using these indicators may disadvantage certain researchers and/or fields of research inquiry, including faculty of color, those with less proficiency in written English scholarship, those publishing in newer venues, and cross-disciplinary and emergent fields of research. Disciplines value the role of academic journals in the broader scholarly discourse unequally and have varying citation norms and timelines that limit the usefulness of journal-level metrics for many fields.

2. Impact Factor is often an appropriate evaluative tool for STEM research and journals, due to the more accurate contextualization of impact factors within narrow STEM fields and more complete journal coverage. Social science disciplines should also consider SJR and/or CiteScore to measure journal-level impact. Humanities disciplines may lean more heavily on qualitative measures, as metrics often fail to provide the level of nuance needed to meaningfully evaluate publication in humanities scholarship. The H5-index provides journal-level metrics for more humanities journals, but at the price of a more simplistic, less meaningful metric.

### **Article-level Metrics**

3. [Article-level metrics](#), namely citations, can and should be used, but acceptable sources of citations should be meaningfully discussed when used.
4. Google Scholar, while more inclusive in its citation counts, also includes source types such as dissertations, preprints, and bibliographies not included in library databases such as Web of Science or Scopus. Citation culture within a field may help determine their usefulness.
5. In many fields, citation numbers rise slowly over many years and can be scarce and hard to track, particularly for books, book chapters, and other non-journal research outputs. Other metrics, such as downloads, views, and usage data can provide snapshots into the potential impact of research, but without meaningful contextualization because those numbers can only offer limited support for the previous or potential impact of articles (for example, a recently published, uncited article). These metrics also suffer from a lack of universal availability or standardization, but in some fields (namely STEM disciplines), correlate highly with citation counts.

Regardless of the metrics or altmetrics used, an academic unit's ability to equitably evaluate the impact of the full range of faculty scholarship and creative works requires multiple indicators and increased appreciation for the role of qualitative assessment. Use of multiple indicators allows for variation to appropriately contextualize individual faculty accomplishments within a broad range of fields and manners of discourse. This should include room for qualitative information in addition to, or in place of, quantitative research metrics in order to recognize and minimize the systemic and self-reinforcing biases that often accompany quantitative scoring systems.

For discipline-specific advice, please feel free to contact Rachel Borchardt, [borchard@american.edu](mailto:borchard@american.edu), who can work with units to research evidence-based information and provide expert guidance.