Increasing Visibility & Documenting Research Impact

ANDREA DINKELMAN – SCIENCE LIBRARIAN - UNL LIBRARIES
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Outline

- Library Guide: Measure Your Research Impact
- Strategies for Increasing Visibility
- Measuring & Documenting Research Impact
  - Journal, Author, Article
- Altmetrics
- Telling Your Story
Measure Your Research Impact
http://unl.libguides.com/researchimpact
Strategies for Increasing Visibility

Establish Your Identity

Use the same variation of your name throughout your academic and professional career. If your name is common, consider adding a middle name to distinguish it from other authors.

Distinguish yourself from other authors.

Uniqueness of a name establishes a “presence” for an author.
Check your name in Web of Science and Scopus. Are there others with the same name?
Register for an ORCID ID.

The Open Researcher and Contributor ID (ORCID) is an open source, non-profit effort to maintain a registry of unique identifier numbers for authors/investigators.

Free!

http://orcid.org
ORCID IDs are being integrated into article indexes and journals.
Create academic profiles

Use **open platforms** to improve search results and provide access to your work. Include links to your academic profile(s) in your email signature.

Can automatically add publications to the profile from *ResearcherID (Web of Science)* or *Scopus*.
Closed Profiles

ResearchGate

Linkedin

ACADEMIA

Join 33,450,851 Academics

Academia is the easiest way to share papers with millions of people across the world for free. A study recently published in PLOS ONE found that papers uploaded to Academia receive a 69% boost in citations over 5 years.
Publish in Open Access Journals and/or Self-Archive in a Repository

Open access publications have higher citation rates.

Source: http://sparceurope.org/oaca/
Publish and Share Research Data

https://data.nal.usda.gov/

Ag Data Commons (ADC) provides access to a wide variety of open data relevant to agricultural research. We are a centralized repository for data already on the web, as well as for new data being published for the first time.
Measuring & Documenting Research Impact: Journal, Article, & Author

Image: http://www.parksandrecreation.org/2013/April/Measuring-Performance--Impact-vs--Output/
Journal Impact

**Journal Impact Factor:** measure of the frequency with which the average article in a journal has been cited in a particular year

The impact factor of a journal is calculated by dividing the number of current year citations to the source items published in that journal during the previous two years.

**American Journal of Clinical Nutrition**

<table>
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<tbody>
<tr>
<td>Sum: 4448</td>
<td>Sum: 657</td>
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</table>

**Calculation:**

\[
\text{Cites to recent items} = \frac{4448}{657} = 6.770
\]
Journal Citation Reports (JCR)
Not all journals have impact factors.

A number of times each year we are asked why NSE does not have an impact factor. NSE is not eligible for a Thomson Scientific® impact factor due to its non-technical content. Recently impact factors are being looked at from various angles. Impact factors are not always a genuine means to measure a journal's worth. In fact, some deliberate manipulation of impact factors has occurred to falsely inflate some journals' impact. In reality, impact factors are just one way to measure a journal's importance. Other significant measures include the influence it has on education policy, how widely its papers are distributed and read, and the overall number of times a paper is cited by other researchers, even beyond the two-year period used to calculate an impact factor.
Impact factors vary by discipline.

Christopher MM. Weighing the impact (factor) of publishing in veterinary journals. J Vet Cardiol. 2015 Jun;17(2):77-82.
Author & Article Impact

**Citation Searching Tools**: Use the following to gather information about author impact (h-index) and article impact (times cited).

- Web of Science Core Collection
- Scopus
- Google Scholar

Web of Science Core Collection & Scopus can be used to create citation reports that include “times cited” information and h-index.

**Caveat**: The information obtained can vary greatly!
Author Metrics

h-index

- “The h-index is an index that attempts to measure both the productivity and citation impact of the published body of work of a scientist or scholar. The index is based on the set of the scientist's most cited papers and the number of citations that they have received in other publications.”

Web of Science Core Collection
Scopus
i10-index: The number of publications with at least 10 citations. This metric is unique to Google Scholar.
Article-Level Metrics

• Metrics based on use of the work or its subsequent application.

• Examples:
  ◦ Views online
  ◦ Downloads
  ◦ Citations to works in published literature
    ◦ Citations represent formal knowledge transfer of research findings via published literature

• Some publishers provide this information (e.g. PLoS, Biomed Central, Elsevier/ScienceDirect via author’s dashboard, UNL Digital Commons)
Article-Level Metrics

Viewed

Total Article Views
9,060
Jan 29, 2013 (publication date) through Nov 7, 2014*

Viewing information

Total
HTML Page Views
PDF Downloads
XML Downloads
Totals
PLOS
7,060
1,080
33
8,173
PMC
652
235
n.a.
887
Totals
7,712
1,316
33
9,060
17.05% of article views led to PDF downloads

Cited

Citing articles via Scopus (11)
Citing articles via Web of Science (11)
Citing articles via Google Scholar

*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 updated on a monthly basis and will be made available once received.
“The study and use of non-traditional scholarly impact measures that are based on activity in web-based environments.”

--PLOS Altmetrics Collection,
Altmetrics

- Attention to research outputs in non-traditional sources, e.g. policy documents, news, blogs and social media
- *Indicators* of research impact
- Help understand how research is being received and used
- Complementary to traditional citation-based analysis

**ACADEMIC ATTENTION**

- Journal Impact Factor
- Citation counts
- H-index
- Number of publications

**BROADER ATTENTION**

- Mentions in news reports
- References in policy
- Mentions in social media
- Wikipedia citations
- Reference manager readers… etc.

Alternative metrics “altmetrics”

Why altmetrics?

• Real-time, immediate feedback on attention to scholarly content
• Track attention to a broad range of research outputs, e.g. articles, posters, data sets, working papers
• Showcase attention to a research output beyond academia
• Provide a more coherent understanding of research attention

“Altmetrics expand our view of what impact looks like, but also of what’s making the impact. This matters because **expressions of scholarship are becoming more diverse.**”

EDITORIAL

Article-level metrics – it’s not just about citations

Michael J. P. Handel

Article-level metrics have been around for some time, but the recent rise in altmetrics has brought them to the forefront of research evaluation. Altmetrics measure the impact of research in ways that traditional metrics, such as citations, cannot. This editorial discusses the importance of altmetrics in assessing the value of research products.

ALTMETRICS: VALUE ALL RESEARCH PRODUCTS

Heather Piwowar
Nature 493, 159 (10 January 2013) | doi:10.1038/493159a
Published online 09 January 2013

A new funding policy by the US National Science Foundation represents a sea-change in how researchers are evaluated, says Heather Piwowar.

Subject terms: Publishing - Policy - Media formats

What a difference a word makes. For all new grant applications from 14 January, the US National Science Foundation (NSF) asks a principal investigator to list his or her research “products” rather than “publications” in the biographical sketch section. This means that, according to the NSF, a scientist’s worth is not dependent solely on publications. Data sets, software and other non-traditional research products will count too.

There are more diverse research products now than ever before. Scientists are developing and releasing better tools to document their workflow, check each other’s work and share information, from data repositories to post-publication discussion systems. As it gets easier to publish a wide variety of material online, it should also become easier to recognize the breadth of a scientist’s intellectual contributions.

But one must evaluate whether each product has made an impact on its field — from a data set on beetle growth, for instance, to the solution to a colleague’s research problem posted on a question-and-answer website. So scientists are developing and assessing alternative metrics, or
Scopus Metric Details
Altimetrics: Journal of Food Science

Quantification of Pizza Baking Properties of Different Cheeses, and Their Correlation with Cheese Functionality

Abstract

The aim of the study is to quantify the pizza baking properties and performance of different cheeses, including the browning and blistering at high temperature, the color change during baking, the moisture content, and the water activity. The differences in the baking properties of the different cheeses were investigated using machine vision techniques. The results showed that the different cheeses exhibited different baking properties, with some cheeses showing better browning and blistering at high temperature, while others showed lower moisture content and water activity. The correlations between the baking properties and the cheese composition were also evaluated, and the results suggested that the cheese composition significantly influences the baking properties of pizza.
Springer: Providing book metrics
Altmetric Bookmarklet

https://www.altmetric.com/products/free-tools/bookmarklet/
Telling Your Story

Documentation Format for Promotion and/or Tenure
http://svcaa.unl.edu/faculty/promotion-tenure

Check with your department for additional guidelines, recommendations, and best practices.
CV

Trevor Branch, University of Washington
Included Web of Science & Google Scholar metrics. Included some altmetrics for specific publications.
CV

Ethan White,
http://whitelab.weecology.org/user/3

Includes links to publications, slide decks, software via GitHub
Impact Story Profile: https://impactstory.org/ethanwhite

Cost: $5/month
Using Metrics: Grant Proposals - Describing Relevant Publications


Using the network of sites deployed in the framework of the BIOCOM project, this study reports a negative effect of aridity on the concentration of organic C and total N, but a positive effect on that of inorganic P, in dryland soils worldwide. Aridity was negatively related to plant cover, which may favor the dominance of physical (i.e. wind-blown sands that abrade exposed rock surfaces) over biological (i.e. litter decomposition) processes. The results of this study indicate that the predicted increase in aridity with climate change by the end of this century will uncouple the C, N and P cycles in dryland soils, thus negatively affecting the provision of key ecosystem services by drylands, such as the buildup of soil fertility and carbon fixation.

This article has attracted lots of attention from scientists since its publication, as it was the object of a “News & Views” in *Nature* (Wardle, 2013, *Nature* 502: 628-629), and has been viewed more than 6300 times since its publication two months ago (see http://goo.gl/EuHYOv for details). This article has also been widely discussed in the social media, as indicated by an Altmetric score of 151, which makes it scoring higher than 99% of its contemporaries and includes it into the top 5% of all the articles tracked by Altmetric (more than 1,730,000; see http://goo.gl/f3fu3A for details). This study has also received substantial attention by newspapers, magazines, web pages and blogs from around the world (see http://goo.gl/CU2hSR for a selection of news).

Christopher R. Carpenter, M.D., has over 55 publications indexed in SCOPUS. The publication types include 26 articles, nine notes, seven editorials, three letters, one book, one book chapter and one conference paper, published in over 22 different journals. His co-authors represent three different countries from affiliations such as Johns Hopkins University, Harvard Medical School, McMaster University, Universitat Bern, to name a few. Dr. Carpenter’s 55 documents have been cited 372 times in 263 subsequent publications. The citations represent nine publication types published in over 160 different journals, ten languages, and authors from over 30 countries representing various affiliations worldwide. His Google Scholar H-index is 14, which places him within the Top 5% of all clinical researchers in the United States. He has also authored ten textbook chapters and co-authored one of his first textbooks in 2013.

Currently, he is an Associate Editor for Academic Emergency Medicine and Annals of Internal Medicine’s ACP Journal Club. He served as Guest Editor for Clinics in Geriatric Medicine. You can review his publication portfolio on Google Scholar, CiNii, or Research ID.
Biology Needs a Modern Assessment System for Professional Productivity


Biological Specimens
- Specimens collected with associated field data

Curation
- Specimens curated or identified

Digital Systems
- Systems that contain digital objects
  - Web sites
  - Databases
  - E-journals

Services and Tools
- Software applications
- and tools for analysis, data acquisition, etc.

Figure 1. Some contributions made by systematic biologists and some metrics for judging the quality and impact of these works. For all categories, quantity can also be measured. Note that overlap exists between categories (e.g., objects in the physical world [publications on paper, biological specimens] can be represented by an object in the digital world [e.g., a database record] or by an actual digital version [e.g., publication]). The boundaries between some categories are blurred (e.g., animation, as a digital object, can have interactivity added to it as its interactive capabilities increase; it could take on the role of a service or tool).

Becker Medical Library Model for Assessment of Research Impact

### RESEARCH OUTPUTS AND ACTIVITIES

**Research Outputs and Activities** are products and/or activities resulting from basic or clinical biomedical research.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Materials</td>
<td>Biological material identified or developed as a result of the research study.</td>
</tr>
<tr>
<td>Books or Book Chapters</td>
<td>Books or book chapters resulting from the research study.</td>
</tr>
</tbody>
</table>

**Collaborations**

Collaborative relationships resulting from the research study. Collaborative relationships can be classified in a number of ways:
- Type of collaboration?
  - Number of collaborations
  - Number of departments or disciplines represented
  - Number of institutions represented
  - Duration
- Type of partner?
  - Community

### COMMUNITY BENEFIT

**Community Benefit** is the enhancement of well-being to the community as a result of research outputs and/or activities.

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness and Identification of Risk Factors</td>
<td>Research study findings lead to public awareness of risk factors of a disease, disorder, condition or behavior. Research study findings lead to identification of risk factors of a disease, disorder, condition or behavior.</td>
</tr>
<tr>
<td>Consumer Health Information</td>
<td>Research study findings result in patient decision materials to assist with healthcare decision-making. Research study findings are cited in materials for patients or the public.</td>
</tr>
<tr>
<td>Health Care Quality Access and Evaluation</td>
<td>Research study findings result in increased performance, quality, and consistency in the delivery of health care services.</td>
</tr>
<tr>
<td>Health Promotion</td>
<td>Research study findings lead to enhancement of health promotion activities among community members.</td>
</tr>
<tr>
<td>Lifestyle Intervention</td>
<td>Research study findings lead to identification of a lifestyle intervention.</td>
</tr>
<tr>
<td>Measurement Instruments</td>
<td>Measurement instrument generated by the research study used by consumers.</td>
</tr>
<tr>
<td>Partnerships</td>
<td>Research study forms partnership with Community or other group to address a community-based need.</td>
</tr>
<tr>
<td>Pharmaceutical Preparations</td>
<td>Drug generated by the research study used by consumers.</td>
</tr>
<tr>
<td>Private Healthcare Benefit Plans</td>
<td>Research study cited in private insurance benefit plan in support of coverage.</td>
</tr>
<tr>
<td>Public Healthcare Benefit Plans</td>
<td>Research study cited in a public insurance benefit plan in support of coverage.</td>
</tr>
<tr>
<td>Standard of Care</td>
<td>Research study findings result in clinically effective approach in the standard of care for a disease, disorder or condition.</td>
</tr>
<tr>
<td>Examples of Outputs and Activities</td>
<td></td>
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<tr>
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<td></td>
</tr>
<tr>
<td>Academic/Professional Status</td>
<td>Editor-In-Chief of a Journal</td>
</tr>
<tr>
<td>Administrative Activities</td>
<td>Evaluation Activities</td>
</tr>
<tr>
<td>Advisory Council Memberships</td>
<td>Funding Agency Council</td>
</tr>
<tr>
<td>Algorithms</td>
<td>Grant Awards: Co-Investigator</td>
</tr>
<tr>
<td>Animal Research Protocols</td>
<td>Grant Awards: Current</td>
</tr>
<tr>
<td>Audio or Video Products</td>
<td>Grant Awards: Dollar Amount (Total)</td>
</tr>
<tr>
<td>Awards</td>
<td>Grant Awards: Funded</td>
</tr>
<tr>
<td>Biological Materials</td>
<td>Grant Awards: In Preparation</td>
</tr>
<tr>
<td>Book Editor</td>
<td>Grant Awards: Key Personnel</td>
</tr>
<tr>
<td>Book Reviewer</td>
<td>Grant Awards: Multiple-Principal Investigator</td>
</tr>
<tr>
<td>Books/Book Chapters</td>
<td>Grant Awards: Principal Investigator</td>
</tr>
<tr>
<td>Case Reports</td>
<td>Grant Awards: Renewed</td>
</tr>
<tr>
<td>Certifications</td>
<td>Grant Awards: Submitted</td>
</tr>
<tr>
<td>Clinical Activities</td>
<td>Grant Awards: Type of Award (federal, state, private, industry, foundation)</td>
</tr>
<tr>
<td>Clinical Guidelines</td>
<td>Grant Awards: Under Review</td>
</tr>
<tr>
<td>Clinical Methods for Improved Clinical Care</td>
<td>Grant Reviewer</td>
</tr>
<tr>
<td>Clinical Research Protocol</td>
<td>Grey Literature</td>
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<tr>
<td>Clinical Teaching Activities</td>
<td>Guideline Development</td>
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<tr>
<td>Collaborations</td>
<td>Honorary Lectures</td>
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<tr>
<td>Committee Activities (local, regional or national)</td>
<td>Honors or Awards</td>
</tr>
<tr>
<td>Community Advisory Board</td>
<td>Intellectual Property</td>
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<tr>
<td>Community-Based Activity or Service</td>
<td>Inventions</td>
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<tr>
<td>Computer Programs</td>
<td>Investigational New Drug (IND) Applications</td>
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<tr>
<td>Conference or Meeting Organizer</td>
<td>Invited Articles</td>
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<tr>
<td>Conference Proceedings/Meeting Abstracts</td>
<td>Invited Book Editor</td>
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<tr>
<td>Consultancy Efforts</td>
<td>Invited Letters</td>
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<tr>
<td>Continuing Education</td>
<td>Invited Presentations</td>
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<tr>
<td>Contributed Presentations</td>
<td>Invited Systematic Reviews</td>
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<tr>
<td>Course Evaluations</td>
<td>Journal Advisory Board</td>
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<tr>
<td>Curricula Development</td>
<td>Journal Articles (animal vs. human)</td>
</tr>
<tr>
<td>Data</td>
<td>Journal Editor</td>
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<tr>
<td>Data and Research Materials</td>
<td>Journal Reviewer</td>
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<tr>
<td>Editor of a Special Journal Issue</td>
<td>Laboratory Techniques or Methods</td>
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<td>Medical Devices</td>
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<td>Membership and/or Service (elected or volunteer) in Professional Organizations</td>
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<td></td>
<td>Mentoring Activities</td>
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<td>Methodology</td>
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<td>National Awards or Prizes</td>
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<td>National Committee Service</td>
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<td>Outreach Efforts</td>
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<td>Pamphlets, Handouts, or Other Educational Materials</td>
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<td>Patents</td>
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<td>Pharmacueticals</td>
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<td>Policy Documents</td>
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<td>Publications</td>
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<td>Research Training Efforts</td>
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<td>Review Articles</td>
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<td>Reviewer or Advisor for a Dissertation</td>
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<td>Scientific Advisory Board Membership</td>
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<td>Software</td>
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<td>Study Sections</td>
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<td>Symposia</td>
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<td>Systematic Reviews</td>
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<td>Task Force Participation</td>
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<td>Teaching Activities</td>
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<td>Technical Reports</td>
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<td>Tenure Status</td>
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<td>Testimony/Expert Witness</td>
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<td>Textbooks</td>
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<td>Trade Publications</td>
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<td>Training Program Efforts</td>
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<td>Volunteer Activities</td>
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<td>White Papers</td>
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http://beckerguides.wustl.edu/impact/outputs
Questions?

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adinkelman10@unl.edu

Measure Your Research Impact guide:
http://unl.libguides.com/researchimpact
Discussion Questions

1. Do you use social media for your research? If yes, why do you find them useful? What do you use them for?

2. What methods/strategies are you currently using to track and document research impact?

3. Have you encountered any challenges/issues in tracking/documenting research impact?

