What’s your Impact?
How to demonstrate your impact to advance your career

November 13, 2018
Yunjo Lee, Project Manager, Office of VP Research
Carolyn Ziegler, Information Specialist, Health Sciences Library
Outline

• Introduction
  – Overview of bibliometrics
  – Alternative metrics
• Responsible use of metrics
• Journal impact
• Citation impact
• Author identifiers and profiles
• How to improve your research impact

A copy of the presentation and handouts will be available on the library website
What is research impact?

**Inputs**
- Research funding
- Researcher existing knowledge
- Facilities & equipment

**Activities**
- Research & development
- New methods
- Collaboration
- Learning
- Experimentation
- Theorising

**Outputs**
- Publications
- Prototypes, artefacts, research datasets, software
- Patents, innovations, products & services
- Methods & processes
- New companies
- Exhibition, performance

**Outcomes**
- Postgraduates
- Cited outputs
- Licence income
- Follow-on income
- Uptake of device or therapies
- Uptake of tools & instruments
- Media Coverage

**Impacts**
- Cultural
- Economic
- Environmental
- Health
- Political
- Scientific
- Social
- Technological
- Training

Source: http://www.ucd.ie/research/portal/impact/impactjourney/
Why does the impact of my research matter?

• Accountability for funding.
• In the health sector, demonstrating research impact is increasingly important when funding for research & development is often seen to be in competition with spending on direct health services.
Why does the impact of my research matter?

- Grant applications, progress reports
- Award/Honour nominations
- Promotion dossiers

- Other benefits
  - Determine if research findings were properly credited, replicated, corrected, improved;
  - Identify similar research projects and collaborators.
www.metrics-toolkit.org

HELPING YOU NAVIGATE THE RESEARCH METRICS LANDSCAPE

The Metrics Toolkit is a resource for researchers and evaluators that provides guidance for demonstrating and evaluating claims of research impact. With the Toolkit you can quickly understand what a metric means, how it is calculated, and if it's a good match for your impact question.

Explore Metrics
Explore the metrics dashboard to learn more about specific metrics, and what they do and do not measure.

Choose Metrics
Choose the right metrics for demonstrating your research impact or evaluating impact of specific outputs.
Metrics

Altmetric Attention Score
Amazon: Ratings and Reviews
Blog Mentions
Citations, Articles
Citations, Books and Book Chapters
Citations, Data
Citations, Software
Downloads, Articles
Downloads, Books and Book Chapters
Downloads, Software
Facebook: Comments, Likes, and Shares
Faculty of 1000 Prime: FFa, Ratings, Reviews
Field Weighted Citation Impact
Github: Forks, Collaborators, Watchers
Goodreads: Ratings and Reviews
h-index
Journal Acceptance Rate
Journal Impact Factor
Mendeley Readers
Monograph Holdings
Monograph Sales and Ranking
News Mentions
Policy Mentions
Publons Score
Pubpeer Comments
Relative Citation Ratio
Twitter Mentions
Wikipedia Citations

http://www.metrics-toolkit.org/explore-metrics/
Alternative Metrics (altmetrics)

https://profiles.impactstory.org/

www.altmetric.com
Altmetric example

Public health: The toxic truth about sugar
Overview of attention for article published in Nature, February 2012

SUMMARY | News | Blogs | Policy documents | Twitter | Facebook | Wikipedia | Google+ | Linkedin | Video
---|---|---|---|---|---|---|---|---|---
Title: Public health: The toxic truth about sugar
Published in: Nature, February 2012
DOI: 10.1038/482072a
PubMed ID: 22297932
Authors: Robert H. Lustig, Laure A. Schmidt, Claire D. Brindis, Lustig RH, Schmidt LA, Brindis CD

TWITTER DEMOGRAPHICS | MENDELEY READERS
---|---
The data shown below were collected from the profiles of 1,586 tweeters who shared this research output. Click here to find out more about how the information was collected.
**Impact Story**

**Ethan White**
University of Florida Associate Professor

### Achievements

**Software Reuse**
Your research software keeps on giving. Your software impact is in the top 71 percent of all research software creators on Depsy.

**Greatest Hit**
Your top publication has been saved and shared 279 times. Only 5% of researchers get this much attention on a publication.

**Global Reach**
Your research has been saved and shared in 22 countries. That’s high: only 43% of researchers get that much international attention.

### Timeline

- **333** Online mentions over 1 year
- **331** 2

### Publications

- **Developing a modern data workflow for evolving data**
  - 2018
  - 279

- **Comparison of large-scale citizen science data and long-term study data for phenology modeling**
  - 2018
  - 40

- **The proportion of core species in a community varies with spatial scale and environmental heterogeneity**
  - 2018
  - 14
• DORA – San Francisco Declaration on Research Assessment

https://sfdora.org/

– Avoid journal-based metrics (e.g. Journal Impact Factors)
– Consider the value and impact of all research outputs (e.g. datasets, software)
– Consider a broad range of impact measures including qualitative indicators (e.g. influence on policy and practice).
Common Bibliometrics

- **Publication counts**: *total, chosen period*
- Career citation count
- Citations of a specific paper
- Average number of citations per paper
- Journal impact
- **Percentiles**: *in a subject area, document type, and year.*
- *h*-index
Journal Impact

• How is it evaluated?
• How can I check it?
The **Journal Impact Factor** is the yearly average number of citations to recent articles published in that journal.

- Published annually in **Journal Citation Reports (JCR)** in Web of Science

- Journal Impact factors are only available for journals indexed in the Web of Science Databases
Web of Science
Author level Metric: H-index

• The number of papers written by an author that have been cited $h$ or more times.

E.g. h-index = 37

Of the 128 documents considered for the h-index, 37 have been cited at least 37 times.
Why is my h-index different in Scopus, Web of Science and Google Scholar?

<table>
<thead>
<tr>
<th></th>
<th>Web of Science</th>
<th>Scopus</th>
<th>Google Scholar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Researcher</td>
<td>21</td>
<td>27</td>
<td>33</td>
</tr>
</tbody>
</table>
## Scopus vs. WoS vs. Google Scholar

<table>
<thead>
<tr>
<th></th>
<th>Scopus</th>
<th>Web of Science</th>
<th>Google Scholar</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Number of Journals</strong></td>
<td>21,950 (since 1970)</td>
<td>13,100 (since 1900)</td>
<td>Unknown (Google search engine)</td>
</tr>
<tr>
<td><strong>Interdisciplinary &amp; International coverage</strong></td>
<td>strong</td>
<td>weak</td>
<td>strong (all subject areas)</td>
</tr>
<tr>
<td><strong>Metrics (in life &amp; health sciences)</strong></td>
<td>Higher than Web of Science</td>
<td>Lowest</td>
<td>Highest</td>
</tr>
</tbody>
</table>

They are continuously evolving. Check each time!

H-index in Scopus
Register now for the free Scopus webinar on May 19th: How Author Profiles work and how they can help you.
Calculating H-index

Problems if you …

• Have a common name
• Don’t use your middle initial consistently
• Have multiple affiliations
• Publish on different topics
Author Ambiguity

Scopus

Search

Alerts

Lists

6,608 of 13,082 author results

Show exact matches only

Limit to
Exclude

Refine

Source Title

Lee, Jaeseung
1. Lee, J. S.
Lee, Jai-Sung
Lee, Jae Seung

776 Physics and Astronomy; Medicine; Engineering; ...

Lee, Jeehyong
2. Lee, J.
Lee, J. H.
Lee, Jaehwi

719 Physics and Astronomy; Engineering; Medicine; ...

Lee, Jaewon
3. Lee, Jae Won
Lee, Jae-Won
Lee, JaeWon

714 Medicine; Biochemistry, Genetics and Molecular Biology; Engineering; ...
Select authors and show documents

### Author Search Results

**Author Name**: "Lee", "J".
**Affiliation**: "University of Toronto".
**Subject Areas**: Life Sciences, Health Sciences.

**Total Results**: 120

#### Show Options
- Show exact matches only
- All

#### Source Title Options
- Proceedings of the National Academy of Sciences of the United States of America
- Plos One
- Journal of Biological Chemistry
- New England Journal of Medicine
- Canadian Journal of Emergency Medicine

#### Affiliation Options
- University of Toronto
- Saint Michael's

#### Refine

<table>
<thead>
<tr>
<th>Author</th>
<th>Journal Title</th>
<th>Subject Areas</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lee, J.</td>
<td></td>
<td>1 Medicine; Pharmacology, Toxicology and Pharmaceutics</td>
<td>Hospital for Sick Children University of Toronto</td>
</tr>
<tr>
<td>Lee, J.</td>
<td></td>
<td>1 Medicine</td>
<td>University of Toronto</td>
</tr>
<tr>
<td>Lee, J.</td>
<td></td>
<td>1 Medicine</td>
<td>Hospital for Sick Children University of Toronto</td>
</tr>
<tr>
<td>Lee, J.C.T</td>
<td></td>
<td>1 Medicine; Immunology and Microbiology</td>
<td>University of Toronto</td>
</tr>
<tr>
<td>Lee, J.J.</td>
<td></td>
<td>1 Medicine</td>
<td>University of Toronto</td>
</tr>
</tbody>
</table>
View Citation Overview
**Citation Overview**

This is an overview of citations for the documents you selected.

### Citation Overview

**Document h-index:** 16

Scopus does not have complete citation information for articles published before 1996.

[View h-graph](#)

#### Yearly Citations

![Graph showing citations over years from 2012 to 2016]

- **2012:** Citations range from 0 to 200
- **2013:** Citations remain relatively stable
- **2014:** Slight increase in citations
- **2015:** Highest peak in citations
- **2016:** Slight decrease in citations

**Date range:** 2012 to 2016

- **Exclude self-citations of all authors:**
- **Exclude Citations from books:**

Click **Update** to edit the data for this graph and the citation table below.

### Documents and Citations

<table>
<thead>
<tr>
<th>#</th>
<th>Title</th>
<th>Year</th>
<th>&lt;2012</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>Subtotal</th>
<th>&gt;2016</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Oxygen-dependent regulation of erythropoietin receptor turnover...</td>
<td>2016</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Electrostatic architecture of the Infectious Salmon Anemia Virus...</td>
<td>2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Structural Basis for Marburg Virus Neutralization by a Cross...</td>
<td>2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16</td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>Synchrotron investigation of microporous layer thickness on...</td>
<td>2015</td>
<td>4</td>
<td>5</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>5</td>
<td>Measuring protein-protein and protein-nucleic acid interactions...</td>
<td>2015</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Structural protein-protein interactions...</td>
<td>2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Structural protein-nucleic acid interactions...</td>
<td>2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Structural protein-protein interactions...</td>
<td>2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Structural protein-nucleic acid interactions...</td>
<td>2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Structural protein-protein interactions...</td>
<td>2015</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

**Total:** 557 citations
Google Scholar Citations Profile

Google Scholar Citations

Google Scholar Citations provide a simple way for authors to keep track of citations to their articles, citing your publications, graph citations over time, and compute several citation metrics. You can also make your Citations public, so that it may appear in Google Scholar results when people search for your name, e.g., rich.

Best of all, it’s quick to set up and simple to maintain - even if you have written hundreds of articles, shared by several different scholars. You can add groups of related articles, not just one article at a time. metrics are computed and updated automatically as Google Scholar finds new citations to your work. You choose to have your list of articles updated automatically, or review the updates yourself, or to manually choose any time.

Get started with Google Scholar Citations
H-index limitations

- Does not account for the number or order of authors
- Does not take the status of the journal into account
- Retracted articles still get cited
- Favours researchers who have been publishing longer
- Self-citations can inflate the h-index
- Different disciplines have different citation conventions
- Not all publications are indexed
- Excludes non-article publications
Author IDs and Profiles

• Ensure your impact is easily identified

• Keep track of your research

• Get credit for your work
Demonstrate your research impact

**Author name:**
Define your identity as an author early and use that name *consistently* throughout your academic and research careers.

**Author Identifier/ Profile:**
Create an ORCID and check your profiles in Scopus, Web of Science and Google Scholar.
Manage your professional identity

- Make it easier to share & promote your publications, edit CVs, calculate your metrics

Christine Neilson
Christine J Neilson
C Neilson
C J Neilson
Christine Joann Neilson
Christine Marshall
ORCID  http://orcid.org/

DISTINGUISH YOURSELF IN THREE EASY STEPS

ORCID provides a persistent digital identifier that distinguishes you from every other researcher and, through integration in key research workflows such as manuscript and grant submission, supports automated linkages between you and your professional activities ensuring that your work is recognized. Find out more.

1. REGISTER  Get your unique ORCID identifier Register now! Registration takes 30 seconds.

2. ADD YOUR INFO  Enhance your ORCID record with your professional information and link to your other identifiers (such as Scopus or ResearcherID or LinkedIn).

3. USE YOUR ORCID ID  Include your ORCID identifier on your Webpage, when you submit publications, apply for grants, and in any research workflow to ensure you get credit for your work.
### Carolyn P Ziegler

**ORCID ID**
https://orcid.org/0000-0002-5545-0610

#### Other IDs
- ResearcherID: G-3937-2011
- Scopus Author ID: 36244990300

### Biography
Information Specialist, Health Sciences Library, St Michael's Hospital, Toronto, Canada

#### Employment (1)
- St. Michael's Hospital: Toronto, Ontario
  - 2014-03-15 to present | Information Specialist (Health Sciences Library)

#### Works (14 of 14)

<table>
<thead>
<tr>
<th>Title</th>
<th>Journal</th>
<th>Year</th>
</tr>
</thead>
</table>

**OUR SHARED PURPOSE**
ResearcherID for Web of Science

Ziegler, Carolyn P

ResearcherID: G-3937-2011
Subject: Information Science & Library Science
ORCID: http://orcid.org/0000-0002-5545-0610

Description: Information Specialist, Health Sciences Library, St Michael's Hospital, Toronto, Canada

My Publications: View
This list contains papers that I have authored.

1. Title: Adrenaline for out-of-hospital cardiac arrest resuscitation: A systematic review and meta-analysis of randomized controlled trials
   Author(s): Lin, S.; Callaway, C.W.; Shah, P.S.; et al.
   Times Cited: 59
Improve your research impact

- Establish and maintain your author profiles
- Publish in open access journals
- Make your work “discoverable”
- Use multiple avenues of dissemination
- Include article URL in media reports
- Use the Strategies for Enhancing Research Impact: (Becker Medical Library Model for Assessment of Research Impact)
  http://beckerguides.wustl.edu/authors/eri
Bibliometrics include publication and citation counts, h-index, journal impact, each with their own limitations.

Bibliometrics should not be used as the only indicator of research productivity and impact.

Consider your career stage and context (e.g. discipline, timeframe), use combinations of different metrics.

Set up author profiles to ensure your publications and impact metrics are easily identified.
Resources

Health Sciences Library Research Impact Guide
http://guides.hsict.library.utoronto.ca/SMH/impact

Carolyn Ziegler: zieglerc@smh.ca  x 77543
Thank you!

Q & A

Your (real) Impact Factor

\[
\text{Impact Factor (corrected)} = \frac{\# \text{ times your work is cited}}{\# \text{ times you actually trash your work} - \# \text{ times you cited yourself (nice try)} - \# \text{ times you were cited just to pad the introduction section} - \# \text{ citations the editor pressured the author to include to increase the journal's impact factor}}
\]

\[
= \frac{\# \text{ original articles you've written} + \# \text{ articles you were included in out of pity or politics} + \# \text{ not-so-original articles you've written copied and pasted}}{}
\]

Jorge Cham © 2008
WWW.PHDCOMICS.COM