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April 2013

Citation Metrics

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Citation Metrics

Linda Galloway and Anne Rauh

Syracuse University Library Learning Commons

April 4, 2013

What are citation metrics?

- Metrics to gauge scholarly impact
- They measure:
 - Quantity of publications (**tweets, blog posts, mentions...**)
 - Quality of publications, how many citations a work receives (**saves, downloads, likes...**)
 - Where the funding comes from
 - Technology transfer, patents, start-ups, etc.

Why use citation metrics?

- Citation metrics are used in promotion and tenure decisions
- Prestige and influence
 - Within a field
 - Within an institution
 - Comparison to peer and aspirational institutions
- Vanity
 - Individual and institutional



Two types of metrics

- Journal level metrics – measure quality of a journal



- Author level metrics – measure the output and reception of individual's work



Journal level metrics

- Journal Impact Factor
- Immediacy Index
- Eigenfactor Score

Journal Impact Factor

- Most popular journal metric
- Used to compare different journals within a certain field
- Defined as the number of citations to articles in that journal in previous two years, divided by number of original research articles and reviews published by that journal in the previous two years
- Only applies to journals indexed in Web of Knowledge

Additional journal metrics

- **Immediacy Index**- average number of times an article is cited in the year it is published. Indicates how quickly articles in a journal are cited (relevance).
- **Eigenfactor Score** –Evaluates the importance of each journal while normalizing for citation differences across disciplines. The sum of the Eigenfactor Scores for all journals listed in Thomson's Journal Citation Reports (JCR) is 100.

Gender Composition of Scholars (1665-2011)

JSTOR

Details

1665 - 2011

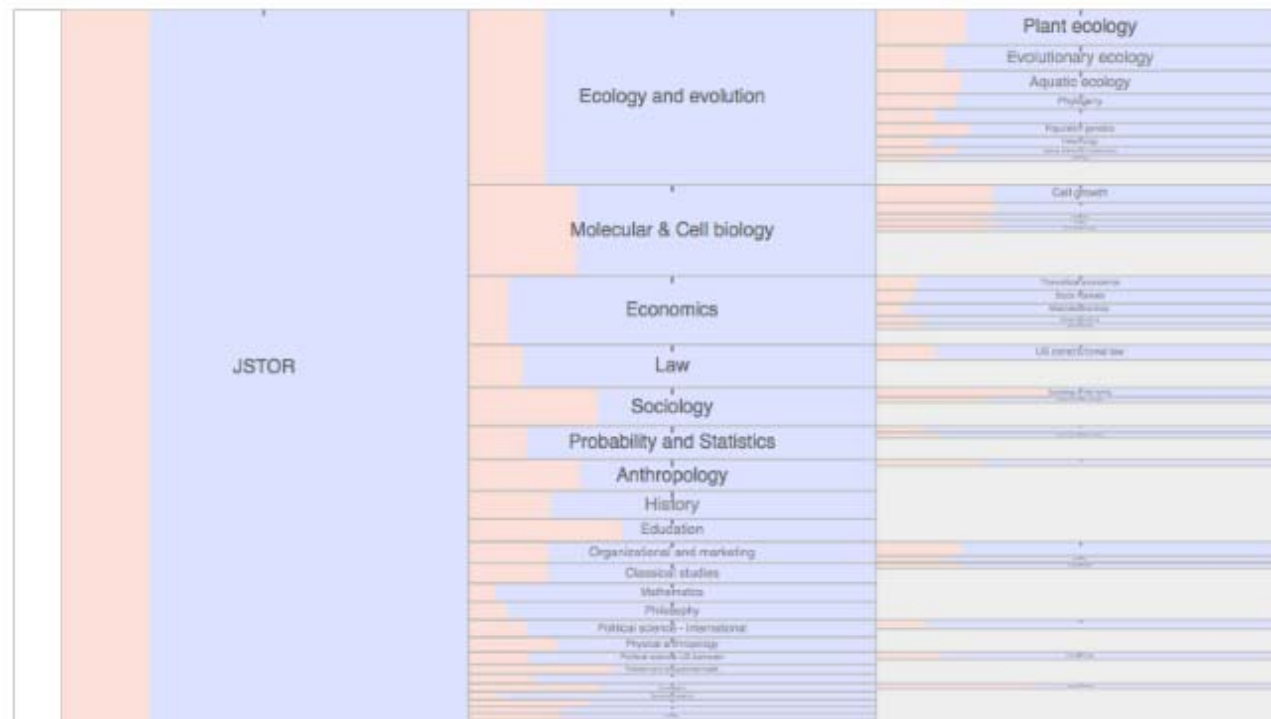
1665 - 1989

1990 - 2011

top papers

Female authors

Male authors





<http://www.eigenfactor.org/gender/>

Journal level tools

- **Journal Citation Reports** – Thomson Reuters product; expensive but well known and well regarded
- **SCImago Journal & Country Rank** – Open access evaluation that includes the journals and country scientific indicators developed from the information contained in the [Scopus](#)[®] database.

Journal Citation Report

Journal: NATURE

Mark	Journal Title	ISSN	Total Cites	Impact Factor	5-Year Impact Factor	Immediacy Index	Citable Items	Cited Half-life	Citing Half-life
<input type="checkbox"/>	NATURE	0028-0836	526505	36.280	36.235	9.690	841	9.4	5.1
Cited Journal  Citing Journal  Source Data Journal Self Cites									

CITED JOURNAL DATA

CITING JOURNAL DATA

 IMPACT FACTOR TREND

RELATED JOURNALS

SCImago Journal & Country Rank

Nature

Country: [United Kingdom](#)

Subject Area: [Multidisciplinary](#)

Subject Category: [Multidisciplinary](#) 

Publisher: [Nature Publishing Group](#). Publication type: Journals. ISSN: 00280836, 14764687

Coverage: 1869-2012

H Index: 734

Author level metrics

- H-index - measures both the productivity and impact of the published work of a scientist or scholar (a scientist has index h if h of his/her N_p papers have at least h citations each, and the other $(N_p - h)$ papers have no more than h citations each)
- Simple citation counts – how many times an author has been cited

Scopus or Web of Science?

Scopus

SciVerse Scopus is the world's largest abstract and citation database of peer-reviewed literature.

- Contains 47 million records, 70% with abstracts
- Nearly **19,500** titles from 5,000 publishers worldwide
- Includes over 4.9 million conference papers
- Interoperability with Engineering Village & Reaxys
- Provides 100% Medline coverage

SU subscription includes:

- 26 million records with references back to 1996 (of which 78% include references).
- 21 million records pre-1996 which go back as far as 1823.

Web of Science

Web of Science consists of nine databases containing information gathered from thousands of scholarly journals, books, book series, reports, conferences, and more.

- It fully covers over **12,000** major journals.
- Create a visual representation of citation relationships with Citation Mapping
- Capture citation activity and trends graphically with Citation Report
- Use the Analyze Tool to identify trends and patterns

SU subscription includes:

- Science Citation Index Expanded (1899-present)
- Social Sciences Citation Index (1898-present)
- Arts & Humanities Citation Index (1975-present)

Cited reference search in Scopus

Make Author Selection

Author Last Name
parks
E.g., smith

Initials or First Name
s.e.
E.g., j.l.

Show exact matches only

Affiliation

E.g., university of toronto

To determine which author names should be grouped together under a single identifier number, the Scopus Author Identifier matches author names based on their affiliation, address, subject area, source title, dates of publication, cited references, and other information. If insufficient data may not be matched, this can lead to more than one entry in the results list for the same author. If more than one document in Scopus are shown in search results. [About Scopus Author Identifier](#)

Tips:

- ✓ Create an account to save your work
- ✓ Check within each author group for publications
- ✓ Merge author profiles, if necessary

Author results: 7 of 11 [Show Profile Matches with One Document](#)

All Page With selected: [Show documents](#) | [View citation overview](#) | [Request to merge authors](#) Sort by

Source Title	Authors	Documents	Subject Area	Affiliation	Citation
<input type="checkbox"/> Acta Horticulturae (1) >	<input type="checkbox"/> 1 Parks, Susan E. Parks, Susan Parks, S. E.	24 Show Last Title	Agricultural and Biological Sciences ; Physics and Astronomy ; Medicine ; ...	Pennsylvania State University	St
<input type="checkbox"/> Advances in Experimental Medicine and Biology (1) >	<input type="checkbox"/> 2 Parks, Sharyn E. Parks, S. E. Parks, Sharyn	11 Show Last Title	Medicine ; Psychology ; Environmental Science ; ...	National Center for Injury Prevention and Control	Atl
<input type="checkbox"/> Agricultural Water Management (1) >	<input type="checkbox"/> 3 Parks, Sophie E. Parks, S. E. Parks, S.	9 Show Last Title	Agricultural and Biological Sciences ; Environmental Science ; Chemistry ; ...	NSW Department of Primary Industries	
<input type="checkbox"/> American Journal of Kidney Diseases (1) >	<input type="checkbox"/> 4 Parks, Elizabeth S. Parks, E. Parks, E. S.	8 Show Last Title	Immunology and Microbiology ; Medicine ; Multidisciplinary ; ...	New York University Langone Medical Center	Ne
<input type="checkbox"/> American Journal of Medical Genetics (1) >	<input type="checkbox"/> 5 Parks, Stephen E. Parks, S. E.	7 Show Last Title	Biochemistry, Genetics and Molecular Biology ; Medicine	Greenwood Genetics Center	Gr
<input type="checkbox"/> Centers for Disease Control and Prevention (1) >	<input type="checkbox"/> Parks, Elizabeth S.		Arts and Humanities ; Social		
<input type="checkbox"/> Cornell Lab of (1) >					

Citation overview

Citations received since 1996

This is a citation overview for a set of 24 documents.

Overview options Hide

Exclude from citation overview: Self citations of all authors

Sort documents: Date range

Year descending 2007 to 2012 Update overview

24 Cited Documents Save list		Citations									
		<2007	2007	2008	2009	2010	2011	2012	Subtotal	>2012	Total
Delete	Total	9	17	10	12	11	40	45	135	0	144
1	<input type="checkbox"/> 2012 Evidence that ship noise increas...							3	3		3
2	<input type="checkbox"/> 2012 Changes in vocal behavior of Nor...								0		0
3	<input type="checkbox"/> 2012 What does ecosystem acoustics re...								0		0
4	<input type="checkbox"/> 2012 Characteristics of gunshot sound...								0		0
5	<input type="checkbox"/> 2012 Dangerous dining: Surface foragi...							1	1		1
6	<input type="checkbox"/> 2011 Sound production behavior of ind...								0		0
7	<input type="checkbox"/> 2011 Seasonal trends in acoustic dete...								0		0
8	<input type="checkbox"/> 2011 Evidence for simultaneous sound ...							1	1		1
9	<input type="checkbox"/> 2011 Population-level lateralized fee...						1	1	2		2
10	<input type="checkbox"/> 2011 Annual changes in the winter son...						1		1		1
11	<input type="checkbox"/> 2011 Individual right whales call lou...						6	8	14		14

h index = 7

Document h index

[View h-Graph](#)

Of the 24 documents considered for the h index, 7 have been cited at least 7 times.

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

[About h-Graph](#)

Cited reference search in Web of Science

Cited Reference Search (Find the articles that cite a person's work)

Step 1: Enter information about the cited work. Fields are combined with the Boolean AND operator.

* Note: Entering the title, volume, issue, or page in combination with other fields may reduce the number of cited reference variants found.

Search interface showing input fields and a search button.

Input field 1: parks, se in Cited Author

Example: O'Brian C* OR OBrian C*

Input field 2: (empty) in (dropdown)

Example: J Comp* Appl* Math* (journal abbrev)

Input field 3: (empty) in (dropdown)

Example: 1943 or 1943-1945

[Add Another Field >>](#)

Searches

Tips:

- ✓ Create an account to save your work
- ✓ By default, citation counts are for *All Years* – you must modify for your chosen parameters
- ✓ Read the 'Cited Reference Search' how-to and follow the directions closely

Current Limits: (To save these permanently, [sign in or register](#).)

Timespan

All Years (updated 2012-11-23)

Date Range

From: 2007-01-01 to: 2012-11-25

Use Processing Date instead of Publication Date

Citation Databases

Cited Reference Search (Find the articles that cite a person's work)

Step 2: Select cited references and click "Finish Search."

Hint: Look for [cited reference variants](#) (sometimes different pages of the same article are cited or papers are cited incorrectly).

Must always 'Finish Search!'

CITED REFERENCE INDEX
References: 1 - 50 of 51

Page 1 of 2 Go

Select Page Select All* Clear All **Finish Search**

Select	Cited Author	Cited Work [SHOW ABBREVIATED TITLES]	Year	Volume	Issue	Page
<input type="checkbox"/>		Conference: 14th International Conference on the Strength of Materials (ICSMA 14) Location: Xian Jiaotong Univ, Xian, PEOPLES R CHINA Date: JUN 04-09, 2006 Sponsor(s): Inst Met Res, CAS Title: Investigation of fracture characteristics in thermally aged thin films of diamond-like carbon			Issue: SI	
<input checked="" type="checkbox"/>	Clark, Christopher W. i [Show all authors]	The urban whale: North Atlantic right whales at the crossroads. Title: Listening to their world: acoustics for monitoring and protecting right whales in an urbanized ocean.	2007			333
<input checked="" type="checkbox"/>	Clark, CW..Parks, SE [Show all authors]	The urban whale: North Atlantic right whales at the crossroads Publisher: Harvard University Press, Cambridge, MA Title: Listening to their world; acoustics for monitoring and protecting right whales in an urbanized ocean	2006			559
<input type="checkbox"/>	Grewal, Harsharn S....Parks, Sophie E. [Show all authors]	AGRICULTURAL WATER MANAGEMENT Title: Water and nutrient use efficiency of a low-cost hydroponic greenhouse for a cucumber crop: An Australian case study	2011	98	5	841
<input type="checkbox"/>	Haigh, A. i [Show all authors]	Title: A Guide to nutritional requirements of some Proteaceae	1997			
<input type="checkbox"/>	Parks, S. E. i [Show all authors]	Handbook of injury and violence prevention Title: Cultural appropriateness in interventions for racial and ethnic minorities.	2007			449
<input checked="" type="checkbox"/>	Miksis-Olds, Jennifer L....Parks, Susan E. [Show all authors]	APPLIED ACOUSTICS Conference: 4th International Workshop on Detection, Classification and Localization of Marine Mammals using Passive Acoustics/1st International Workshop on Density Estimation of Marine Mammals Using Passive Acoustics Location: Univ Pavia, Collegio Cairoli, ITALY Date: SEP 10-13, 2009 Title: Detecting marine mammals with an adaptive sub-sampling recorder in the Bering Sea	2010	71	11 Special Issue: SI	1087
<input checked="" type="checkbox"/>	Parks, Susan E. i [Show all authors]	The urban whale: North Atlantic right whales at the crossroads. Title: Acoustic communication: social sounds and the potential impacts of noise.	2007			310
<input checked="" type="checkbox"/>	Parks, SE	Acoustic communication in the North Atlantic right whale (Eubalaena glacialis) Publisher: Massachusetts Institute of Technology & Woods Hole Oceanographic Institute, USA	2003			
<input type="checkbox"/>	Parks, S. E. [Show all authors]	INTERNATIONAL SYMPOSIUM ON GROWING MEDIA 2007 Conference: International Symposium on Growing Media Location: Nottingham, ENGLAND Date: MAR 31, 2009 Title: Initial Efforts to Improve the Management of Substrates in Greenhouse Vegetable Production in Australia	2009	819		331
<input type="checkbox"/>	PARKS, SE [Show all authors]	AMERICAN JOURNAL OF SURGERY Title: COMPLICATIONS OF COLOSTOMY CLOSURE	1985	149	5	672

Results Cited Author=(parks, se)
Timespan=2007-01-01 - 2012-11-25. Databases=SCI-EXPANDED, SSCI, A&HCI.

Create Alert / RSS

Results: 85

Refine Results

Search within results for

Search

Web of Science Categories Refine

- ACOUSTICS (26)
 - AUDIOLOGY SPEECH LANGUAGE PATHOLOGY (25)
 - MARINE FRESHWATER BIOLOGY (19)
 - ECOLOGY (17)
 - ZOOLOGY (17)
- [more options / values...](#)

Document Types Refine

- ARTICLE (79)
 - REVIEW (6)
 - PROCEEDINGS PAPER (1)
- [more options / values...](#)

Research Areas

Authors

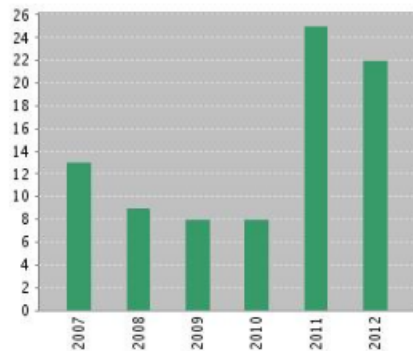
Save to: ENDNOTE® WEB ENDNOTE® RefWorks I Wrote These Publications more options

1. Title: **Obtaining calibrated sound pressure levels from consumer digital audio recorders**
 Author(s): Mennitt, D. J.; Fristrup, K. M.
 Source: APPLIED ACOUSTICS Volume: 73 Issue: 11 Pages: 1138-1145 DOI: 10.1016/j.apacoust.2012.05.006 Published: NOV 2012
 Times Cited: 0 (from Web of Science)
 SURLinks [View abstract]
 2. Title: **Using air-deployed passive sonobuoys to detect and locate critically endangered North Pacific right whales**
 Author(s): Rone, Brenda K.; Berchok, Catherine L.; Crance, Jessica L.; et al.
 Source: MARINE MAMMAL SCIENCE Volume: 28 Issue: 4 Pages: E528-E538 DOI: 10.1111/j.1748-7692.2012.00573.x Published: OCT 2012
 Times Cited: 0 (from Web of Science)
 SURLinks
 3. Title: **Seasonal presence of cetaceans and ambient noise levels in polar waters of the North Atlantic**
 Author(s): Klinck, Holger; Nieukirk, Sharon L.; Mellinger, David K.; et al.
 Source: JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA Volume: 132 Issue: 3 Pages: EL176-EL181 DOI: 10.1121/1.4740226 Part: Part 1 Published
 Times Cited: 0 (from Web of Science)
 SURLinks [View abstract]
- Title: **A quieting ocean: Unintended consequence of a fluctuating economy**

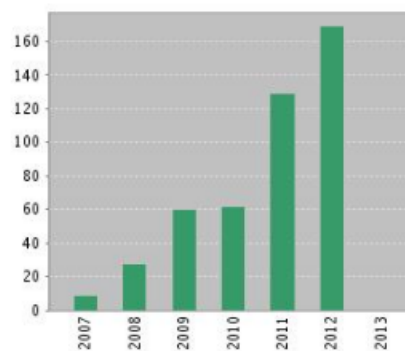
Citation Report Cited Author=(parks, se)
Timespan=2007-01-01 - 2012-11-25. Databases=SCI-EXPANDED, SSCI, A&HCI.

This report reflects citations to source items indexed within Web of Science. Perform a Cited Reference Search to include citations to items not indexed within Web of Science.

Published Items in Each Year



Citations in Each Year



Results found: 85

Sum of the Times Cited [?] : 457

Sum of Times Cited without self-citations [?] : 309

Citing Articles [?] : 315

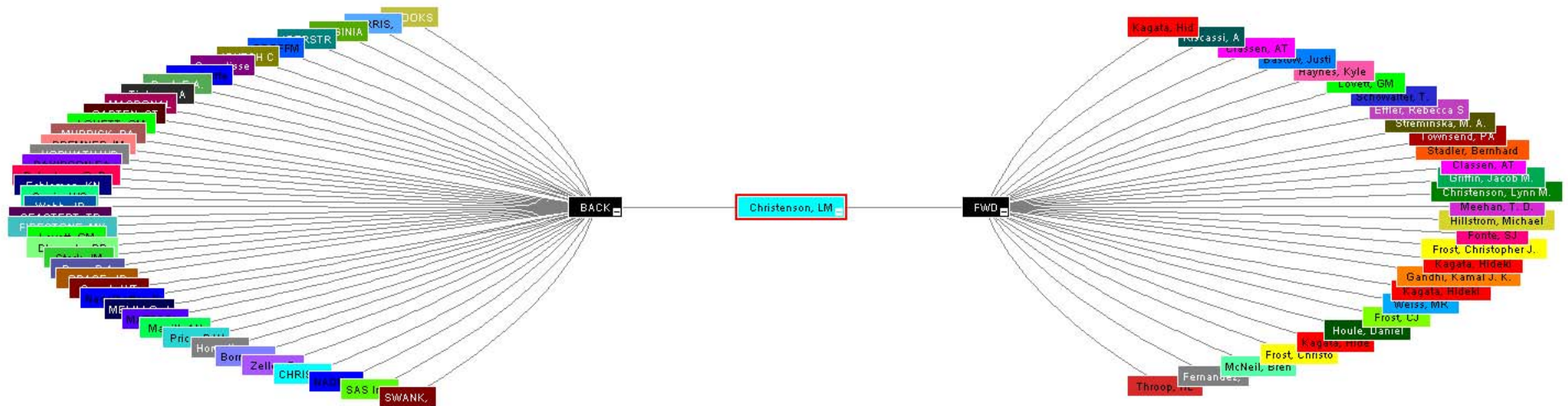
Citing Articles without self-citations [?] : 249

Average Citations per Item [?] : 5.38

h-index [?] : 11

Citation Mapping in Web of Science

Visually Demonstrate Author/Article Influence



Source: Web of Knowledge™, www.thomsonscientific.com

Record details for the nodes are displayed below (double-click a node to show its details). Click a checkbox below to locate that node above.

<input type="checkbox"/>	Primary Author	Journal Name	Article Title
<input checked="" type="checkbox"/>	Christenson, LM	2002-OECOLOGIA	The fate of nitrogen in gypsy ...
<input type="checkbox"/>	BREMNER JM	1966-USE ISOTOPE SOIL OR	(article title not available)
<input type="checkbox"/>	MATTSON WJ	1975-SCIENCE	(article title not available)
<input type="checkbox"/>	Bormann, F. H.	1979-Pattern and process in a forested ecosystem	(article title not available)

The fate of nitrogen in gypsy moth frass deposited to an oak forest floor	
Number / Title	WOS:000175936300015 / The fate of nitrogen in gypsy moth frass deposited to an oak forest floor
Journal Title	OECOLOGIA
Publication Year	2002
Author	Christenson L, Lovett G, Mitchell M, et al
Source Abbreviation	OECOLOGIA

Google Scholar Citations



Patrick Williams

Syracuse University

Information Studies - Digital Humanities - Online Learning - Digital Libraries - Information Literacy

Verified email at syr.edu

Google scholar

Search Authors

My Citations - Help

Follow this author

Follow new articles
Follow new citations

Co-authors

No co-authors

Citation indices

	All	Since 2008
Citations	54	34
h-index	3	3
i10-index	1	1

Citations to my articles



Select: All, None

1-8

Title / Author	Cited by	Year
Collection understanding <input type="checkbox"/> M Chang, JJ Leggett, R Furuta, A Kerne, JP Williams, SA Burns, RG Bias Proceedings of the 4th ACM/IEEE-CS joint conference on Digital libraries ...	40	2004
Pedagogical design for an online information literacy course: College students' learning experience with multi-modal objects <input type="checkbox"/> HL Chen, JP Williams The Canadian Journal of Information and Library Science 33 (1/2), 1-38	7	2009
Use of multi-modal media and tools in an online information literacy course: College students' attitudes and perceptions <input type="checkbox"/> HL Chen, JP Williams The Journal of Academic Librarianship 35 (1), 14-24	4	2009
Cost justification <input type="checkbox"/>	2	2009

Problem: author disambiguation



Joan V. Dannenhoffer
Syracuse University



John F. Dannenhoffer III
Syracuse University



Joanne M. Dannenhoffer
Central Michigan University



Joanne V. Dannenhoffer
M.D. May 2013



John F. Dannenhoffer
PhD Candidate, University of

(spouses)

(siblings)

(siblings)

Databases see all of these
people as:

J Dannenhoffer
JV Dannenhoffer
JF Dannenhoffer
JM Dannenhoffer

Solution: ORCID

“ORCID is an open, non-profit, community-based effort to create and maintain a registry of unique researcher identifiers and a transparent method of linking research activities and outputs to these identifiers.”

- <http://orcid.org/>



Linda Galloway
0000-0003-1194-8166

Altmetrics

- altmetrics is the creation and study of new metrics based on the social web for analyzing, and informing scholarship

Altmetric tools

- ImpactStory
- ReaderMeter
- ScienceCard
- PLoS Impact Explorer
- PaperCritic
- Crowdometer

Altmetric limitations

- New
- Time frame – some new tools cannot search old mentions, tweets, etc.
- Rely on user generated metadata
- Should social media mentions be given the same weight as scholarly article citations?
- Can these tools be easily manipulated to raise significance of an article?

ImpactStory

article

Mega-phylogeny approach for comparative biology: an alternative to supertree and supermatrix approaches

(2009) Smith, Beaulieu, Donoghue *BMC Evol Biol*

saved by scholars



cited by scholars



recommended by scholars



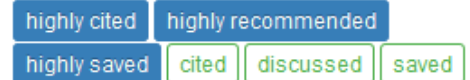
discussed by public



saved by public



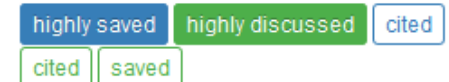
cited by public



? What do these numbers mean?

Computational toxicology using the OpenTox application programming interface and Bioclipse.

(2011) Willighagen, Jeliazkova, Hardy et al. *BMC research notes*



Multistep correlations via covariance processing of COSY/GCOSY spectra: opportunities and artifacts

(2008) Martin, Hilton, Blinov et al. *Magn. Reson. Chem.*



Pyramid symmetry transforms: From local to global symmetry

(2007) Zavidovique, Di Gesù *Image and Vision Computing*



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ReaderMeter

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DUNCAN J WATTS

H_R -Index: 35
 G_R -Index: 56
Most read publication: 167
Total number of publications: 138
Total bookmarks: 3561

[\[what's this?\]](#)

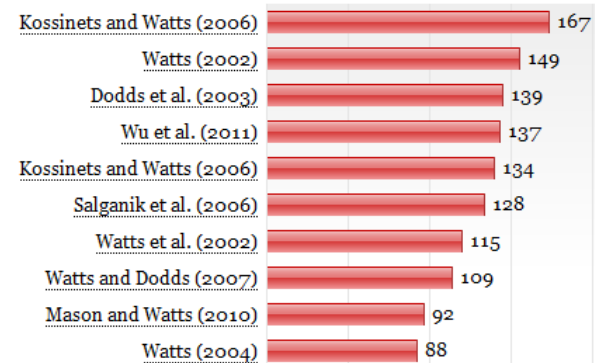
Permalinks

HTML: http://readermeter.org/Watts.Duncan_J

JSON: http://readermeter.org/Watts.Duncan_J/json

Powered by  Mendeley

Top 10 publications by readership (?)



[\[show all\]](#)

Duncan J Watts's coauthors

Luis A N AMARAL Luis A N AMARAL Eytan BAKSHY
Albert-Laszlo BARABASI Albert-László BARABÁSI Albert-lászló BARABÁSI
Duncan S CALLAWAY Munmun De CHOUDHURY Frederic DALSACE
Frédéric DALSACE Coralie DAMAY Munmun DE CHOUDHURY
In DEFENSE Ap DIJKSTERHUIS Peter DODDS Peter Sheridan DODDS
Peter S DODDS David DUBOIS Robert G ECCLES Karen FRASER
Michael FRUMIN Rashi GLAZER Sharad GOEL Daniel G GOLDSTEIN
Steve HASKER Eric Von HIPPEL Jake M HOFMAN Yoshito HORI
Harry HUTSON Yoko ISHIKURA Klaus KLEINFELD Gueorgi KOSSINETS
G KOSSINETS Marina KRAKOVSKY Sébastien LAHAIE The LEADER
Phillip LONGMAN Brand MAGIC R Dean MALMGREN Michael C MANKINS
Winter A MASON Winter MASON Daniel C MEDINA Christopher MEYER
Charles R MORRIS Roby MUHAMAD Mark E J NEWMAN Mark NEWMAN
ME NEWMAN David M DENNOCK Jack BEBETTY Pauline BERRY

More on citation metrics

Citation Metrics

URL: <http://researchguides.library.syr.edu/citationmetrics> | [RSS Updates](#) | [SHARE](#) [f](#) [t](#) [e](#) ...

[Home](#) [Web of Science](#) [Scopus](#) [Google](#) [Journal Citation Reports](#) [Additional Resources](#) [Syracuse University Recent Publications](#)

Citation Metrics



Citation analysis is a quantifiable measure of academic output and may help inform decisions on promotion and tenure. This guide is designed to help faculty members and librarians use and understand the tools available to us. We are fortunate to have access to the top paid resources used for citation metrics – Web of Science, Scopus and Journal Citation Reports.

We need to be aware of the limitations and incongruities of citation metrics. The databases referenced above, and including Google Scholar, do not correct errors in citing papers. This means that one paper may be cited many different ways and appear as separate entries in these tools. Also, author and institutional naming inconsistencies complicate these analyses.

Comparisons between these tools should be avoided. The databases use different sources to generate data and some are more comprehensive than others. In addition, the literature suggests that these tools are skewed towards the STM (science, technical and medical) community of scholars.

The recommended methods for citation analyses are detailed this guide. Another useful metric is the h-index which can be generated in both Web of Science and Scopus. The h-index is defined as:

A scientist has index h if h of [his/her] N_p papers have at least h citations each, and the other $(N_p - h)$ papers have at most h citations each.

Information for Authors



ORCID - Open Researcher ID - is an initiative to provide researchers and scholars with a persistent, unique identifier. This will enable

Comparison across Databases

Useful data can be found in each tool but direct comparisons across databases are problematic. These resources use different pools of data, date ranges and may interpret citations differently. Correct attribution of authorship can also cause reporting errors. Take control of your scholarly output - check your author profiles and register for an ORCID ID.

	Times cited	H-Index

Subject Specialist



Linda Galloway
0000-0003-1194-8166

Contact Info

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