

Bibliometric Indicators

How are scientific
«performances» evaluated?

Midi de l'info scientifique

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WHAT KIND OF BIBLIOMETRIC INDICATORS?

- Indicators for journals (IF, Google Scholar metrics...)
- Indicators for articles (article-level metrics)
- Indicators for researchers (h-index, g-index, Google Scholar ID, RG score...)

WHY USING BIBLIOMETRIC INDICATORS ?

- To explore:
- the impact of a particular paper
 - the impact of a researcher/research group
 - the impact of a research field
- To evaluate individuals in decisions on:
- hiring
 - promotion
 - funding
 - prizes and awards...

SAN FRANCISCO DECLARATION ON RESEARCH ASSESSMENT



- intends to halt the practice of correlating the journal impact factor to the merits of a specific scientist's contributions
- states that the impact factor is not to be used as a substitute "measure of the quality of individual research articles, or in hiring, promotion, or funding decisions"
- Published in 2012 by the American cell biology society in collaboration with editors and publishing houses
- By November 2018, over 700 scientific organizations and 13,000 researchers had signed the DORA declaration, including the UNIGE and SNSF

Indicators for Journals

Indicators for Articles

Indicators for Researchers

IMPACT FACTOR

Only for journals indexed in the Journal Citations Reports
(Thomson Reuters)

$$IF\ 2017 = \frac{\text{\# of citations in 2017 of (2015+2016) publications from that journal}}{\text{total \# of "citable items" published in (2015+2016) by that journal}}$$

$$JIF = \frac{\text{Citations in 2017 to items published in 2015 (41701) + 2016 (32389)}}{\text{Number of citable items in 2015 (902) + 2016 (880)}} = \frac{74,090}{1,782} = 41.577$$

THE JOURNAL CITATION REPORTS

InCites Journal Citation Reports

Clarivate Analytics

Home

Download Print Share

Go to Journal Profile

Master Search

Compare Journals

View Title Changes

Select Journals

Select Categories

- SPECTROSCOPY
- SPORT SCIENCES
- STATISTICS & PROBABILITY
- SUBSTANCE ABUSE
- SURGERY
- TELECOMMUNICATIONS
- THERMODYNAMICS

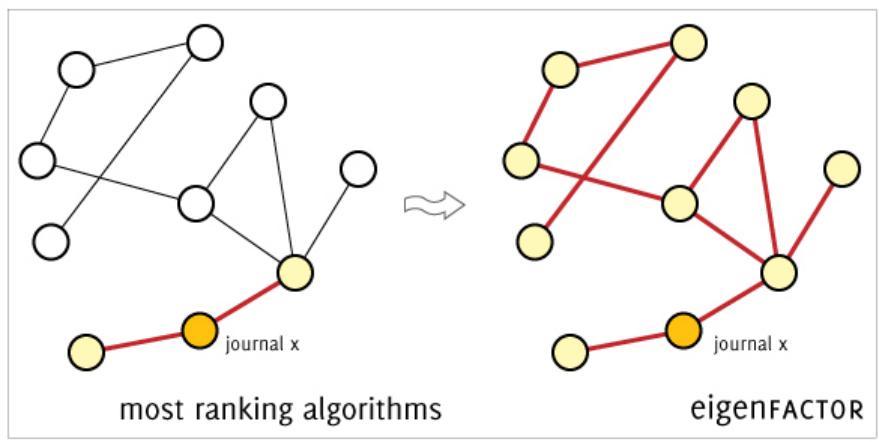
Journals By Rank Categories By Rank

Journal Titles Ranked by Impact Factor

Compare Selected Journals Add Journals to New or Existing List Customize Indicators

	Full Journal Title	Total Cites	Journal Impact Factor	Eigenfactor Score
6	NATURE REVIEWS DRUG DISCOVERY	31,313	50.167	0.05400
7	JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION	148,775	47.661	0.30000
8	Nature Energy	5,072	46.859	0.02000
9	NATURE REVIEWS CANCER	50,407	42.784	0.08000
10	NATURE REVIEWS IMMUNOLOGY	39,215	41.982	0.08500
11	NATURE	710,767	41.577	1.35500
12	NATURE REVIEWS GENETICS	35,680	41.465	0.09400
13	SCIENCE	645,134	41.058	1.12600
14	CHEMICAL SOCIETY REVIEWS	125,900	40.182	0.27600

EIGENFACTOR



	Full Journal Title	Total Cites	Journal Impact Factor	Eigenfactor Score
1	PLoS One	582,878	2.766	1.86200
2	NATURE	710,767	41.577	1.35500
3	SCIENCE	645,134	41.058	1.12600
4	PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA	637,269	9.504	1.10800
5	Nature Communications	178,348	12.353	0.92600
6	JOURNAL OF THE AMERICAN CHEMICAL SOCIETY	533,512	14.357	0.72800
7	Scientific Reports	192,841	4.122	0.71900
8	NEW ENGLAND JOURNAL OF MEDICINE	332,831	79.260	0.70200
9	PHYSICAL REVIEW LETTERS	432,843	8.839	0.65800

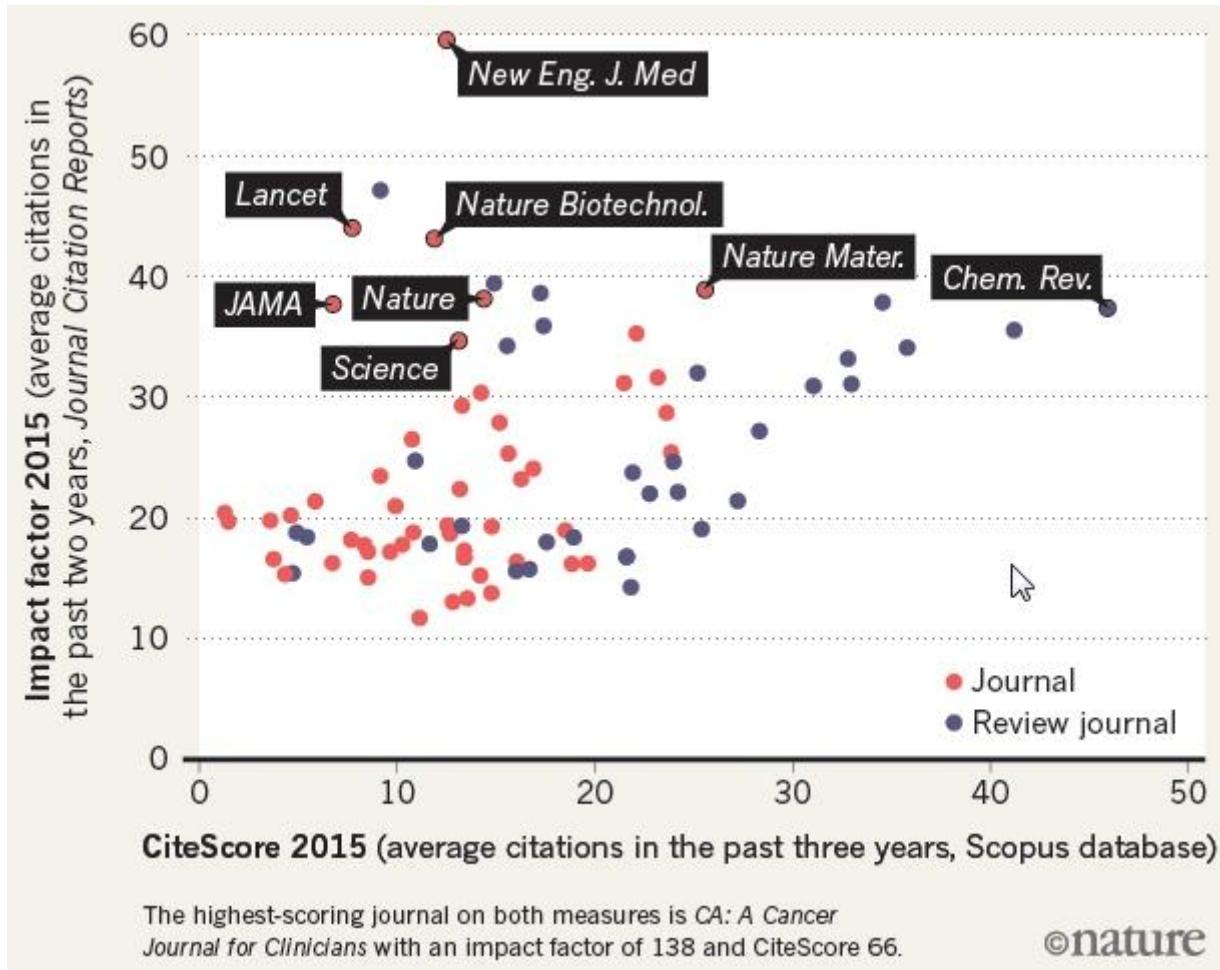
SCOPUS CITESCORE

Similar to IF, but calculated on publications indexed by Scopus and on a 3-years-window

$$\text{CiteScore 2017} = \frac{\# \text{ citations in 2017 (2014+2015+2016)}}{\text{Number of documents published in 2014+2015+2016}}$$



SCOPUS CITE SCORE



Van Noorden R. Controversial impact factor gets a heavyweight rival.
Nature News. 2016;540: 325. doi:[10.1038/nature.2016.21131](https://doi.org/10.1038/nature.2016.21131)

CONTROVERSY ABOUT IF

- Field-dependent factor
- Inappropriate statistical measure: citation distributions within journals are highly skewed
- IF can be manipulated (or “gamed”) by editorial policy (e.g. reviews %, coercitive citations)

RESPONSES TO IF

"If your IF is above 10, then you enter here. If it's lower, well..."



Indicators for Journals

Indicators for Articles

Indicators for Researchers

ARTICLE-LEVEL METRICS

Measures of the usage and impact of individual articles:

- ✓ Cited
- ✓ Viewed
- ✓ Discussed
- ✓ Saved
- ✓ Recommended

ARTICLE-LEVEL METRICS IN PLoS

plos.org [create account](#) [sign in](#)

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FIFTEENTH ANNIVERSARY

Browse Publish About Search [advanced search](#)

OPEN ACCESS PEER-REVIEWED

RESEARCH ARTICLE

Biotic and Human Vulnerability to Projected Changes in Ocean Biogeochemistry over the 21st Century

Camilo Mora , Chih-Lin Wei, Audrey Rollo, Teresa Amaro, Amy R. Baco, David Billett, Laurent Bopp, Qi Chen, Mark Collier, Roberto Danovaro, Andrew J. Gooday, Benjamin M. Gruber, Paul R. Halloran, [...], Moriaki Yasuhara [view all]

Published: October 15, 2013 • <https://doi.org/10.1371/journal.pbio.1001682>

Metrics

340 Save	73 Citation
42,174 View	76 Share

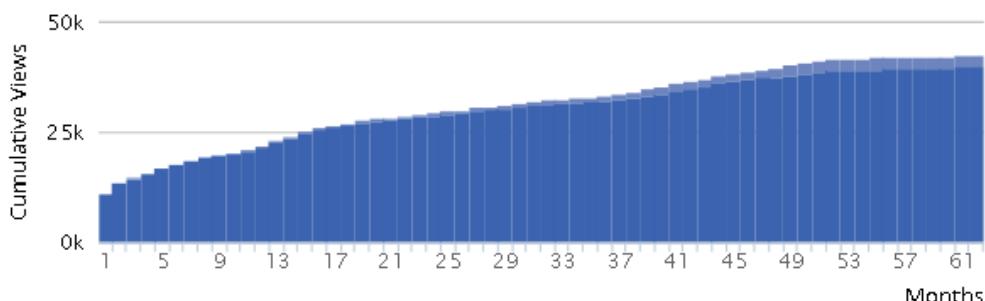
Article Authors Metrics Comments Media Coverage [Download PDF](#) ▾ [Print](#) [Share](#)

Viewed ?

Total Article Views

42,176Oct 15, 2013 (publication date)
through Nov 01, 2018 *

	HTML Page Views	PDF Downloads	XML Downloads	Totals
PLOS	35,275	4,208	126	39,609
PMC	2,314	253	n.a.	2,567
Totals	37,589	4,461	126	42,176
11.87 % of article views led to PDF downloads				

Compare average usage for articles published in **2013** in the subject area:

Biology and life sciences



| Show reference set



*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 posted on a monthly basis and will be made available once received.



144

Cited ?



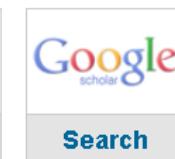
73



65



8



Search

Saved ?



340

Discussed ?



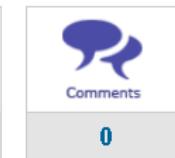
1



11



76



0

Information on PLOS Article-Level Metrics

Questions or concerns about usage data? Please let us know.

ARTICLE-LEVEL METRICS IN WEB OF SCIENCE

Web of Science

Clarivate Analytics

Search Tools ▾ Searches and alerts ▾ Search History Marked List

Results: 5 (from Web of Science Core Collection)

You searched for: AUTHOR: (mora) AND AUTHOR: (rollo) ...More

Create Alert

Refine Results

Search within results for...

Sort by: Date Times Cited Usage Count Relevance More

1. Biotic and Human Vulnerability in the Anthropocene: A Global Synthesis of Biogeochemistry over the 21st Century

By: Mora, Camilo; Wei, Chih-Lung; et al.

PLOS BIOLOGY Volume: 11 Number: 10

Published: OCT 2013

Obtenir Free Full Text

5K

Save to EndNote online

Save to EndNote desktop

Add to Marked List

Analyze Results

Create Citation Report

Times Cited: 68 (from Web of Science Core Collection)

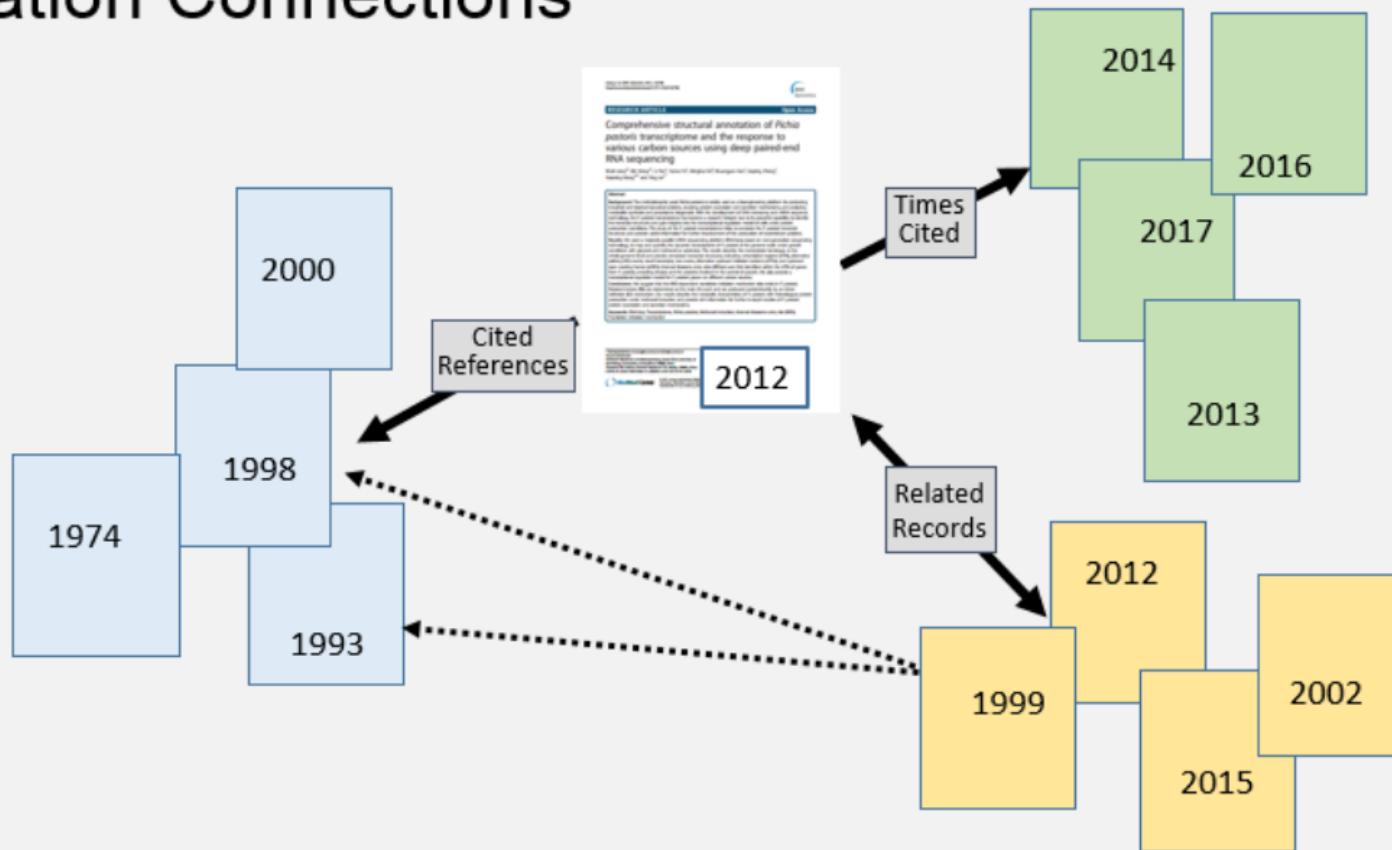
Usage Count

Last 180 Days: 6 Since 2013: 148

Detailed description: This screenshot shows a search result for an article titled 'Biotic and Human Vulnerability in the Anthropocene: A Global Synthesis of Biogeochemistry over the 21st Century'. The search interface includes a sidebar for refining results and a header with navigation links. A dropdown menu for saving the article to EndNote is open, with 'Save to EndNote desktop' highlighted. A red box surrounds the 'Usage Count' section on the right, which displays metrics for the last 180 days and since 2013. A red arrow points from the 'Save to EndNote' section towards the 'Usage Count' section.

ARTICLE-LEVEL METRICS IN WEB OF SCIENCE

Citation Connections



ARTICLE-LEVEL METRICS IN GOOGLE SCHOLAR

Google Scholar biotic and human vulnerability to projected changes in ocean biogeochemistry 

Articles Environ 19 400 résultats (0,15 s)

Date indifférente Conseil : Recherchez des résultats uniquement en [Français](#). Vous pouvez indiquer votre langue de recherche sur la page [Paramètres Google Scholar](#)

Depuis 2018 [\[HTML\]](#) **Biotic and human vulnerability to projected changes in ocean biogeochemistry over the 21st century**

Depuis 2017 [\[HTML\]](#) plos.org

Depuis 2014 Fulltext via UNIGE

Période spécifique... [C Mora, CL Wei, A Rollo, T Amaro, AR Baco... - PLoS ONE, 2013 - journals.plos.org](#)

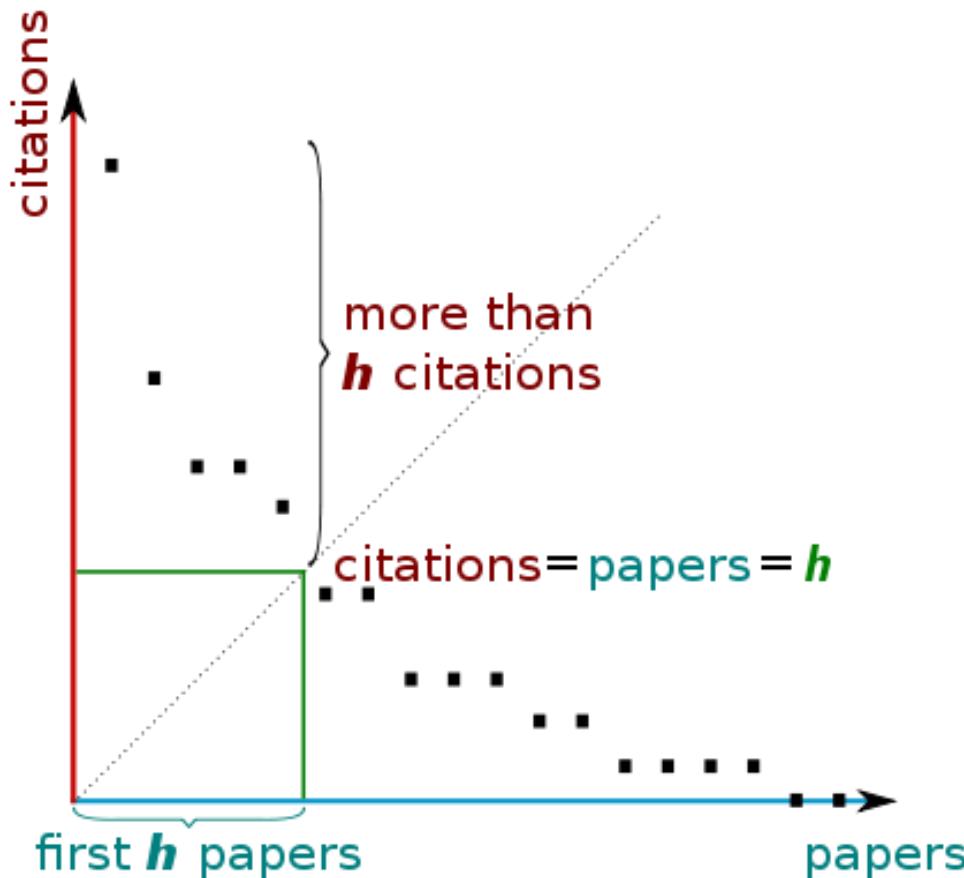
Ongoing greenhouse gas emissions can modify climate processes and induce shifts in ocean temperature, pH, oxygen concentration, and productivity, which in turn could alter biological and social systems. Here, we provide a synoptic global assessment of the ...

Trier par pertinence   Cité 121 fois  Autres articles  Les 23 versions  Web of Science: 68 

Trier par date

Indicators for Journals
Indicators for Articles
Indicators for Researchers

H-INDEX



H-INDEX

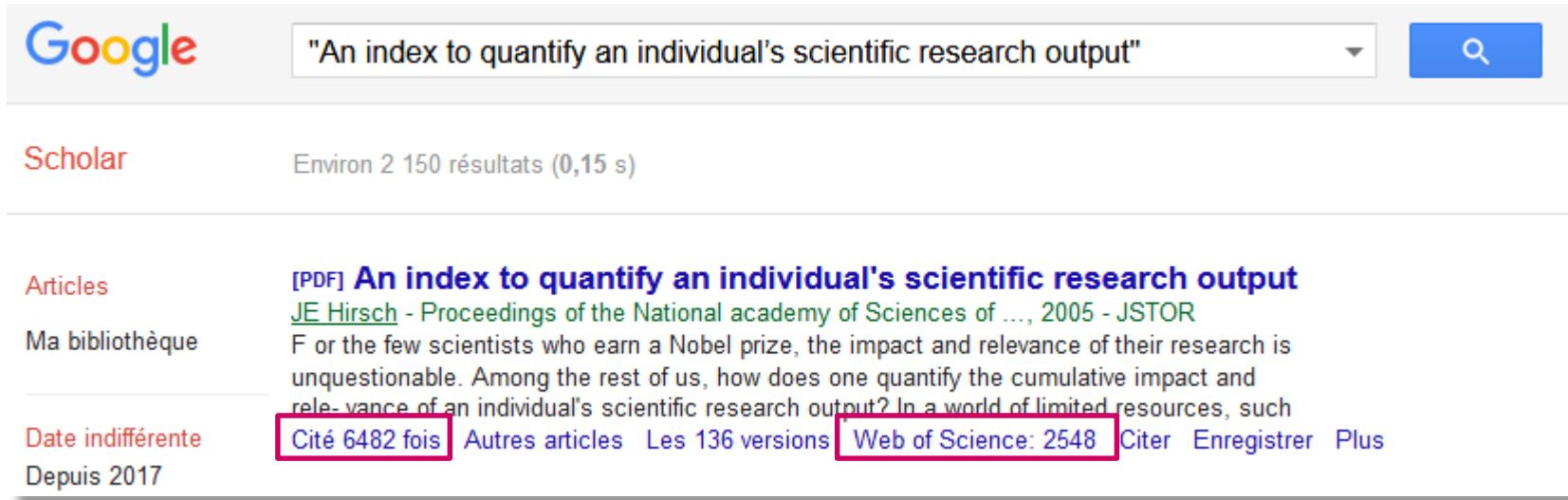
Year of publication	Nb of citations
2009	9
2010a	143
2010b	12
2011	8
2012a	3
2012b	11
2013	9
2014	8
2015	7
2017	1



Year of publication	Nb of citations	Rank
2010a	143	1
2010b	12	2
2012b	11	3
2009	9	4
2013	9	5
2011	8	6
2014	8	7
2015	7	8
2012a	3	9
2017	1	10

METRICS ARE SOURCE-DEPENDENT

Databases and website have different coverage.
domain, language, type of documents, presence of duplicates...



The screenshot shows a Google Scholar search results page. The search query is "An index to quantify an individual's scientific research output". The results are filtered by 'Scholar' and show approximately 2,150 results in 0.15 seconds. The top result is a PDF by J.E. Hirsch from the Proceedings of the National Academy of Sciences, published in 2005, available via JSTOR. The page includes navigation links like 'Articles', 'Ma bibliothèque', and 'Date indifférente'. At the bottom, it shows metrics: 'Cité 6482 fois', 'Autres articles', 'Les 136 versions', 'Web of Science: 2548', 'Citer', 'Enregister', and 'Plus'. The 'Cité 6482 fois' and 'Web of Science: 2548' boxes are highlighted with red rectangles.

We recommend that you **indicate the source** of the metric you mention !

H-INDEX IN WEB OF SCIENCE

Web of Science

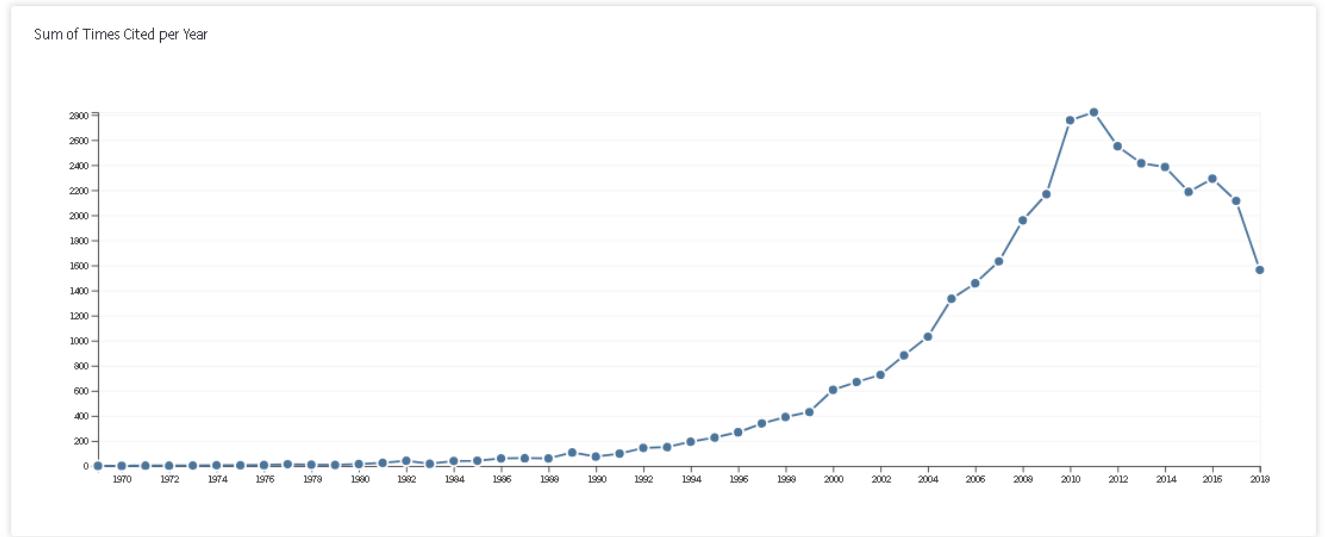
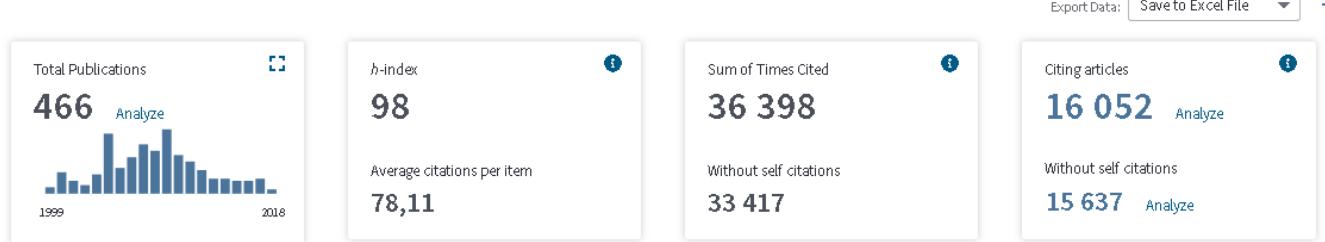
Clarivate
Analytics

Search Search Results Tools ▾ Searches and alerts ▾ Search History Marked List

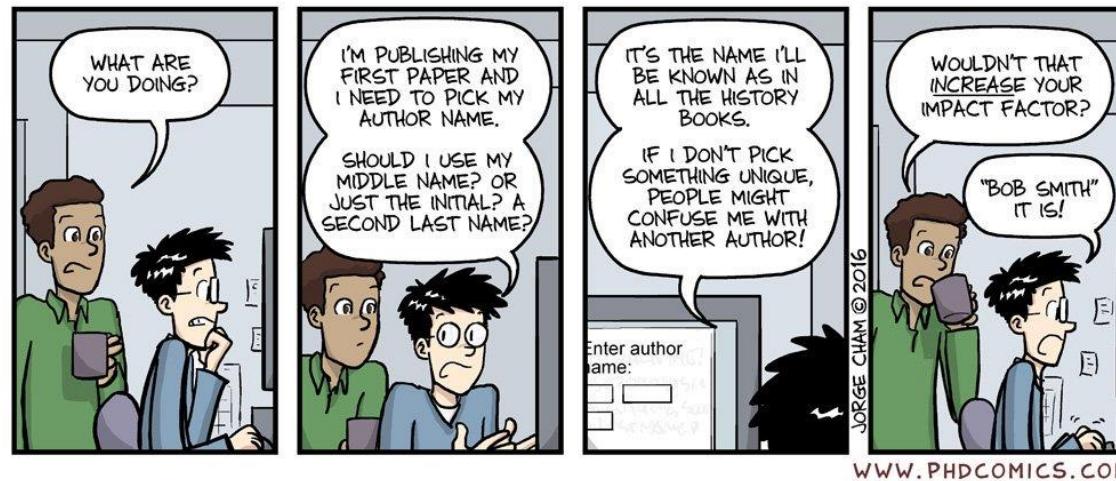
Citation report for 466 results from Web of Science Core Collection between 1900 and 2019 Go

You searched for: AU=(mayor m*) AND (SU=(ASTRONOMY ASTROPHYSICS) OR WC=(Multidisciplinary Sciences)) ...More

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



BEWARE OF HOMONYMS



Quality checks are required and they are time-consuming.

H-INDEX CONTROVERSY

H-index needs to be weighed by:

- the publication type
- the author contribution
- the age of the scientist
- the discipline of research
- the impact of articles

BUT: h-index is simple, which means its pros and cons are relatively transparent

GOOGLE SCHOLAR CITATIONS

≡ Google Scholar

1 Profile

Track citations to your articles. Appear in Scholar.
audreybellier@gmail.com [Switch account](#)

2 Articles

Name

Full name as it appears on your articles

Affiliation

Email for verification

Areas of interest

Homepage (optional)

3 Settings

Next

≡ Google Scholar

1 Profile

2 Articles

3 Settings

My Citations

Articles: 7 →

Audrey Bellier

Select articles that you wrote.

Global functional analyses of cellular responses to pore-forming toxins
 CY Kao, FCO Los, DL Huffman, S Wachi, N Kloft... - PLoS pathogens, 2011

Hypoxia and the hypoxic response pathway protect against pore-forming toxins in *C. elegans*
 A Bellier, CS Chen, CY Kao, HN Cinar, RV Aroian - PLoS pathogens, 2009

Discovery of a highly synergistic anthelmintic combination that shows mutual hypersusceptibility
 Y Hu, EG Platzter, A Bellier, RV Aroian - Proceedings of the National Academy of Sciences, 2010

WWP-1 is a novel modulator of the DAF-2 insulin-like signaling network involved in pore-forming toxin cellular defenses in *Caenorhabditis elegans*
 CS Chen, A Bellier, CY Kao, YL Yang, HD Chen... - PLoS one, 2010

The pore-forming protein Cry5B elicits the pathogenicity of *Bacillus* sp. against *Caenorhabditis elegans*
 MF Kho, A Bellier, V Balasubramani, Y Hu, W Hsu... - PLoS One, 2011

Isolating resistance mutants to *Bacillus thuringiensis* Cry21A toxin in *C. elegans*.
 A Bellier, T Tucey, R Aroian - International Worm Meeting, 2007

Caenorhabditis elegans resistance to Cry toxins of *Bacillus thuringiensis*
 A Bellier - The 2007 ESA Annual Meeting, December 9-12, 2007, 2007

1 - 7 < >

GOOGLE SCHOLAR CITATIONS

You can:

- check who is citing your publications
- check graph citations over time
- compute several citation metrics
- make your profile public

GOOGLE SCHOLAR ID



Aurelien Roux

SUIVRE

OBTENIR MON PROPRE PROFIL

Department of Biochemistry, University of Geneva
Adresse e-mail validée de unige.ch - Page d'accueil

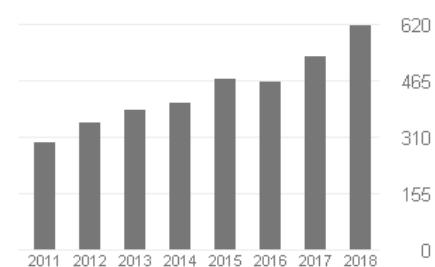
physics of biology lipid membrane mechanics epithelium mechanics
intracellular membrane traffic endocytosis

TITRE	CITÉE PAR	ANNÉE
Dynamin and the actin cytoskeleton cooperatively regulate plasma membrane invagination by BAR and F-BAR proteins T Itoh, KS Erdmann, A Roux, B Habermann, H Werner, P De Camilli Developmental cell 9 (6), 791-804	553	2005
GTP-dependent twisting of dynamin implicates constriction and tension in membrane fission A Roux, K Uyhazi, A Frost, P De Camilli Nature 441 (7092), 528	476	2006
Structural basis of membrane invagination by F-BAR domains A Frost, R Perera, A Roux, K Spasov, O Destaing, EH Egelman, ... Cell 132 (5), 807-817	439	2008
Role of curvature and phase transition in lipid sorting and fission of membrane tubules A Roux, D Cuvelier, P Nassoy, J Prost, P Bassereau, B Goud The EMBO journal 24 (8), 1537-1545	433	2005
A minimal system allowing tubulation with molecular motors pulling on giant liposomes A Roux, G Cappello, J Cartaud, J Prost, B Goud, P Bassereau Proceedings of the National Academy of Sciences 99 (8), 5394-5399	289	2002
Cooperative extraction of membrane nanotubes by molecular motors C Leduc, O Campàs, KB Zeldovich, A Roux, P Jolimaitre, L Bourel-Bonnet, ... Proceedings of the National Academy of Sciences 101 (49), 17096-17101	224	2004

Citée par TOUT AFFICHER

	Toutes	Depuis 2013
--	--------	-------------

Citations	4780	2881
indice h	30	28
indice i10	40	40



Coauteurs TOUT AFFICHER

- Patricia Bassereau
Institut Curie >
- Martin Lenz
Researcher in Physics, CNRS a... >

RESEARCH GATE SCORE



Christoph Renner

37.76 · PhD

Follow

Overview

Research

Info

Scores

Research interests

Introduction

Edit

Develop and use low temperature scanning probe microscopy and spectroscopy to study low dimensional correlated electron materials, including superconductors, charge-ordered systems and atomic chains. Current research focus is on the interplay between electron matter and superconductivity. Vice-Dean of the Faculty of Sciences, Director of the PhysiScope. The team welcomes applications from highly skilled and motivated PhD students.

Skills and expertise (20)

View all

Material Characterization

Materials

Materials Science

Condensed Matter Physics

128

9,308

5,119

Research items

Reads

Citations

Affiliation

University of Geneva



Location

Genève, Switzerland

Department

Department of Quantum Matter Physics

Position

Professor (Full)

Christoph Renner's Lab

Lab head



Christoph Renner

Lab members (7)



RESEARCH GATE SCORE



Christoph Renner
37.76 · PhD

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Overview Research Info Scores Research interests

RG Score ⓘ **37.76**



Breakdown:

- 99.92% Publications
- 0.00% Questions
- 0.00% Answers
- 0.08% Followers

Percentile:

Christoph Renner's score is higher than 95% of ResearchGate members'.



0% 50% 100%

h-index ⓘ **29**

h-index **29**
excluding self-citations

Top *h* cited research:

Pseudogap Precursor of the Superconducting Gap in Under and Overdoped ...
Article · Jan 1998 · Physical Review Letters

Follow See more

Want to know how you measure up?

You can keep track of your own scores directly from your scores page.

See your scores



WHAT REALLY COUNTS?

“Everything that can be counted does not necessarily count;
everything that counts cannot necessarily be counted.”

Albert Einstein

THANK YOU FOR YOUR ATTENTION

<http://www.unige.ch/biblio>

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Vincent.Huber@unige.ch



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