

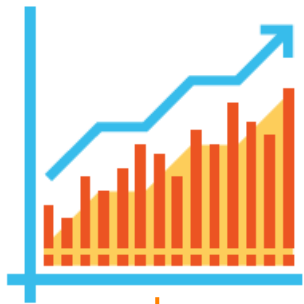
A Basket of Metrics for Research Evaluation

Presented by Anna Tordai

28 May 2017



Research Metrics Can Be Used to...



Analyze the strengths of research at the institution

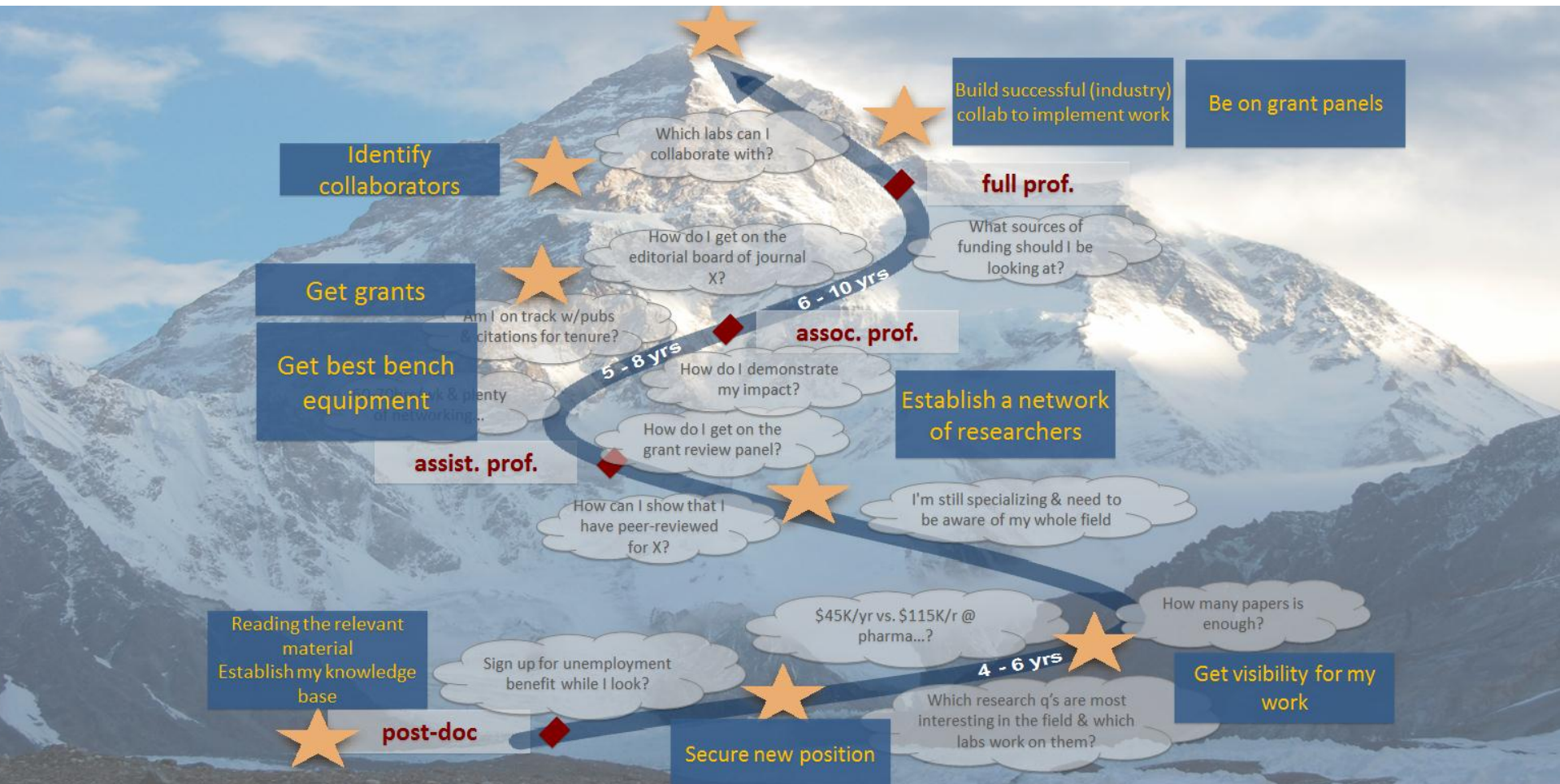
Determine where research is a good potential investment

Demonstrate ROI (Return On Investment) of research money

Identify rising stars amongst the early career researchers

Tell a better narrative about everything that is happening with research

Different Researchers Have Different Needs for Metrics

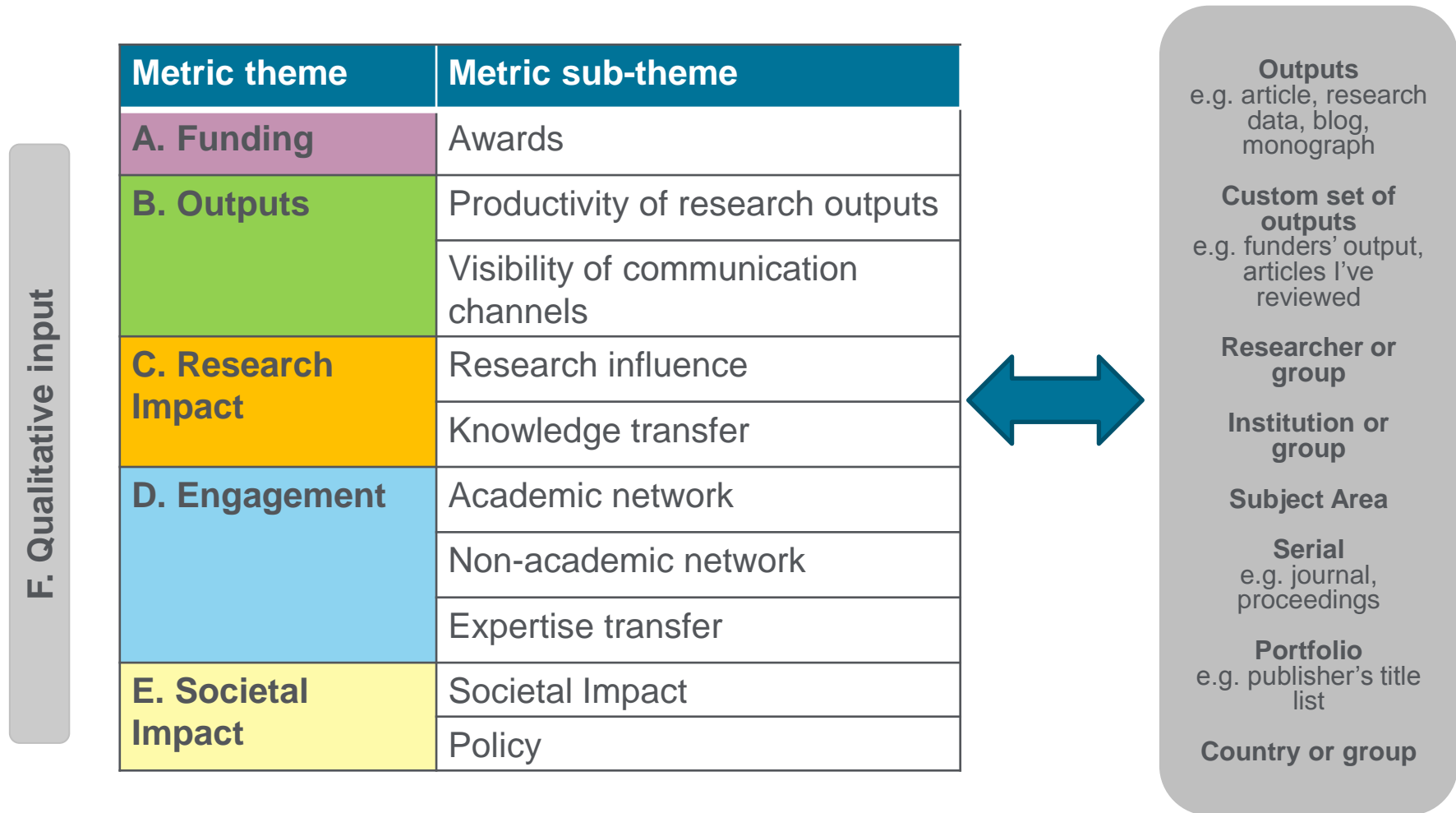


Diverse Needs for Metrics

F. Qualitative input

Metric theme	Metric sub-theme
A. Funding	Awards
B. Outputs	Productivity of research outputs
	Visibility of communication channels
C. Research Impact	Research influence
	Knowledge transfer
D. Engagement	Academic network
	Non-academic network
	Expertise transfer
E. Societal Impact	Societal Impact
	Policy

Diverse Needs for Metrics...and Diverse Entities



Examples of Metrics



Researcher Level

- Document Count
- *h*-Index



Article Level

- Citation Count
- Citations per paper
- Field-Weighted Citation Impact (FWCI)
- Outputs in top quartile
- Citations in policy and medical guidelines
- Usage
- Captures, e.g. bookmarking
- Mentions
- Social media



Journal Level

- CiteScore
- Journal Impact Factor
- Scimago Journal Rank (SJR)
- Source Normalized Impact Per Paper (SNIP)

Two Golden Rules for using research metrics

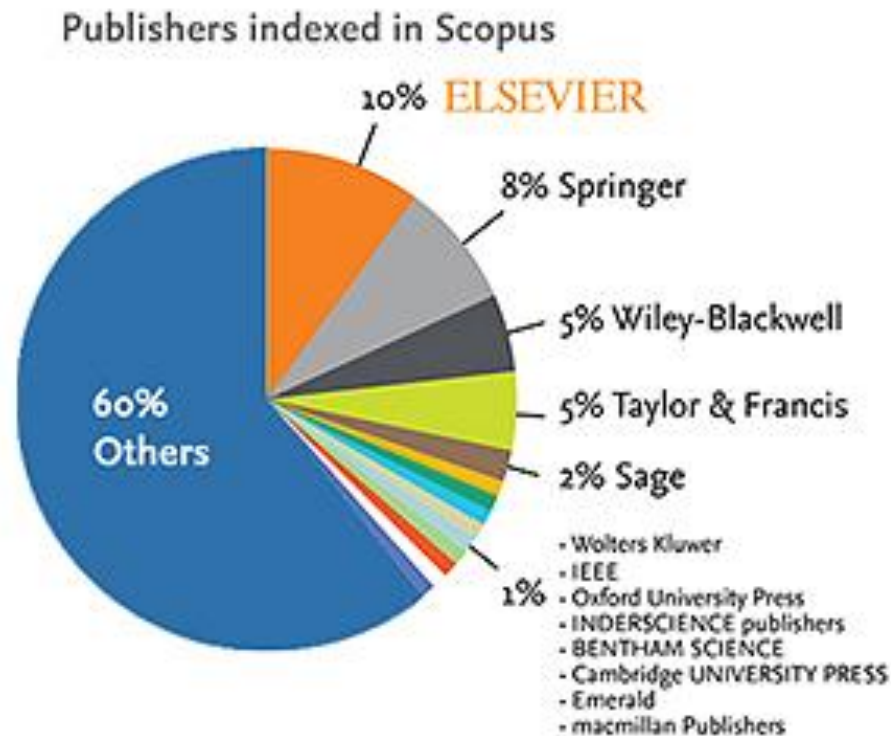
When used correctly, research metrics together with qualitative input give a balanced, multi-dimensional view for decision-making

Always use both qualitative and quantitative input into your decisions

Always use more than one research metric as the quantitative input

Where do these numbers come from?

Lots of sources



Extracting entities

Unstructured
Data



Extracting entities

Unstructured
Data



Entity typing

Entity disambiguation

Establishing relations

Extracting entities

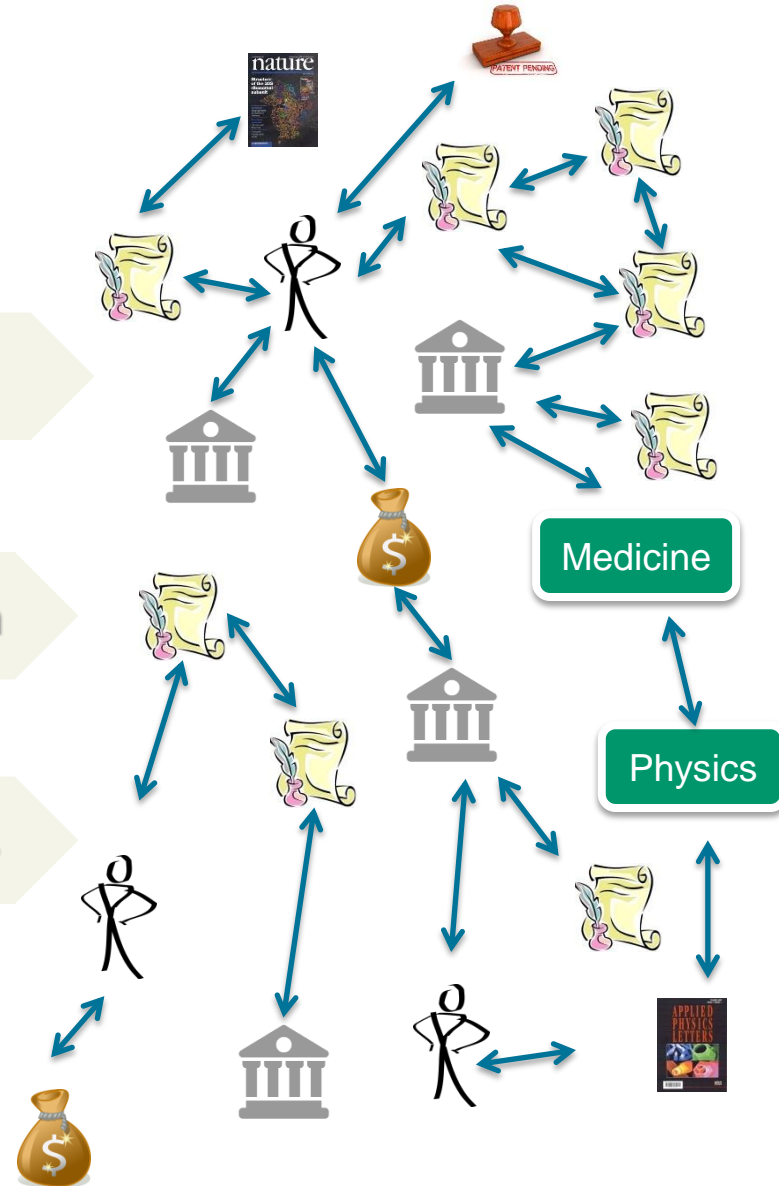
Unstructured Data



Entity typing

Entity disambiguation

Establishing relations




Improved by user feedback

Author feedback wizard

Use the Scopus Author Feedback Wizard to collect all your Scopus records in one unique author profile. To lo possible, please provide all the name variants under which you have published. Once you have submitted the autt Team will process your request within 4 weeks.

❗ If you are unable to find a publication, if there is a problem with the citation count or you have additional feedback

Author	<input type="text"/> Last name E.g., Smith	<input type="text"/> Initials or First name E.g., J.L.
 Add affiliation		

Claim your awarded grant


We found this grant which was probably granted to you:

Performance of inline separation technology in unlocking restricted/ shut down wet gas wells

Vissers A Van Asperen V Akdim R Boudi A

Funding organization: National institute of Health • Amount: Not specified • Start date: 3rd of April

 Reject this suggestion

Claim this award 

Metrics in Profiles: Researchers

Paul Groth
 PhD
 Disruptive Technology Director
 Elsevier Labs

21 h-index | 1760 Citations

Message | Follow

Overview | Stats | Network

Other IDs
 orcid.org/0000-0003-0183-6910
 Scopus Author ID: 8983775600

Research interests
 data integration, the web, knowledge integration, scientific workflow, metrics, e-science, semantics

About
<http://pgroth.com>

Co-authors (335)
 Luc Moreau (20) - University of Southampton
 Simon Miles (19) - King's College London
 Yolanda Gil (14) - University of Southern California
 Carole Goble (12) - Follow

Editorships
 2016 - Present: Journal of Web Semantics (Editorial Board Member)

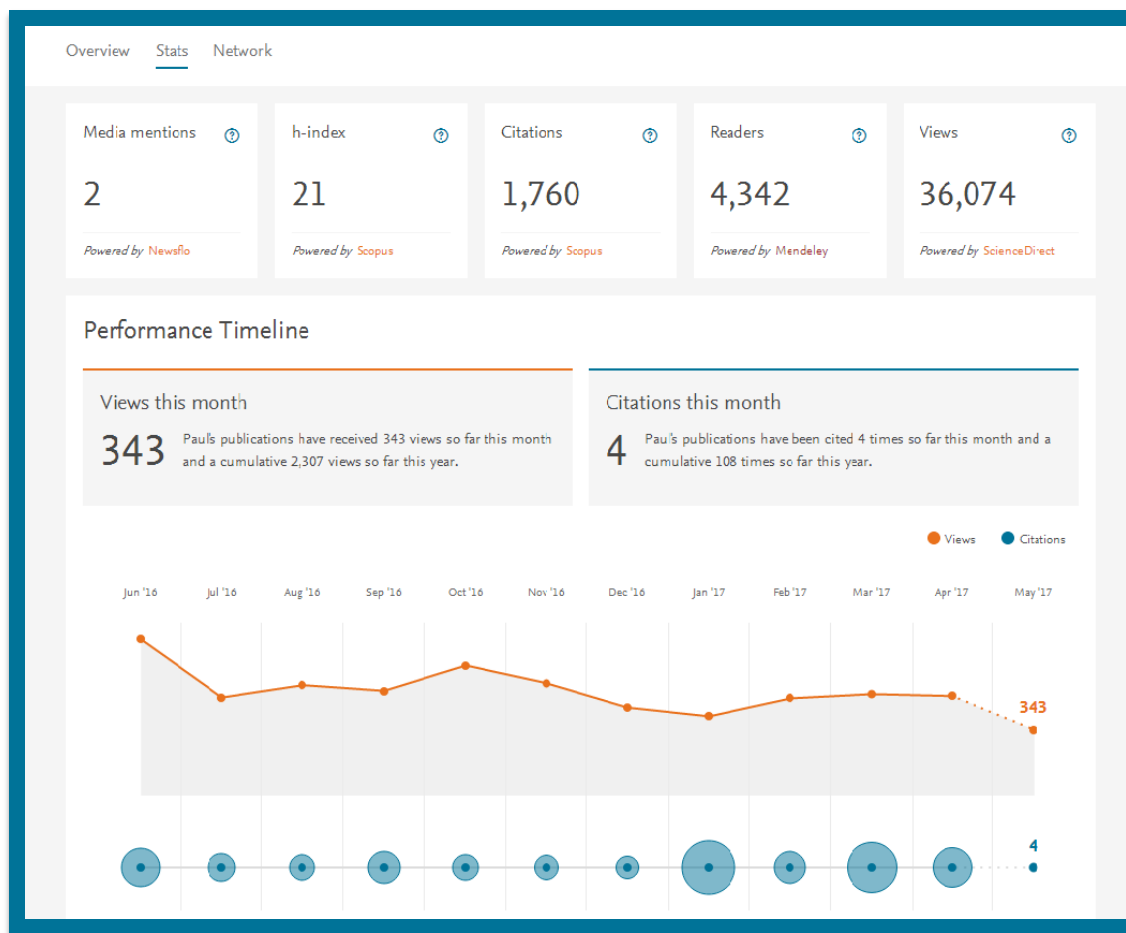
Publications
 Publication date (newest)

Linked Data Management
 Hauswirth M, Wylot M, Grund M, et. al.
 Handbook of Big Data Technologies (2017)
 1 Readers, n/a Citations

PROV 2R: Practical Provenance Analysis of Unstructured Processes
 Stamatogiannakis M, Athanasopoulos E, Bos H, et. al.
 ACM Transactions on Internet Technology (TOIT) (2017)
 2 Readers, n/a Citations

Applying Universal Schemas for Domain Specific Ontology Expansion
 Groth P, Pal S, McEachth D, et. al.
 5th Workshop on Automated Knowledge Base Construction (AKBC) (2016)
 10 Readers, n/a Citations

Metrics in Profiles: Researchers



Slide based on slide created by Holly J. Falk-Krzesinski and Andrea Michalek as part of the Metrics Across the Research Lifecycle deck. Used with permission.

Metrics in Profiles: Institutions

The screenshot displays a profile for the National Institutes of Health (NIH) on a research intelligence platform. The profile includes a header with the NIH logo, name, location (Bethesda, Maryland, United States), and key metrics: 2.318 FWCI and \$108bn Funds (2009 - now). Below the header are navigation tabs for Overview, Stats, Grants, Publications, and Researchers. The main content area is divided into several sections:

- About NIH:** A brief description of the NIH as a U.S. Department of Health and Human Services agency.
- Grants per research area:** A table listing research areas and their corresponding grant counts.
- Funded researchers:** A list of researchers and their grant counts.
- Key Metrics:** A row of four boxes showing 301,672 Grants, 518,228 Publications, 63,442 Researchers, and 5,894 Institutions (all for 2009 - now).
- Recently awarded grants:** A list of three grants with details on the amount and start date.

Research Area	Grants
General Medicine	55,489
Cancer Research	46,901
Immunology	46,396
Developmental Biology	40,448
Public Health, Environmental and Occupational Health	29,555

Researcher	Grants
Azadi, P. (UNIVERSITY OF GEORGIA)	237
Woodland, D.L. (WADSWORTH CENTER)	133
Dunnam, R. (CORNELL UNIVERSITY)	127

Grant Title	Amount	Start Date
Hardwiring Mechanism into Predicting Cancer Phenotypes by Computational Learning	\$400k	Apr 5, 2016
A Novel Drug Delivery System to Treat Peripheral Arterial Disease	\$413k	Apr 5, 2016
Effects of Psychological Stress on Arterial Stiffness	\$145k	Apr 5, 2016

Metrics in Profiles: Institutions

The screenshot displays the profile of the National Institutes of Health (NIH) on a research intelligence platform. The profile includes a header with the NIH logo, name, location (Bethesda, Maryland, United States), and key metrics: 2.318 FWCI and \$108bn Funds (2009 - now). Below the header are navigation tabs for Overview, Stats, Grants, Publications, and Researchers. A central metrics bar, highlighted with an orange border, shows: Grants (301,672), Publications (518,228), Researchers (63,442), and Institutions (5,894), all for the period 2009 - now. The left sidebar contains an 'About NIH' section, a table of 'Grants per research area', and a list of 'Funded researchers'. The main content area features 'Recently awarded grants' with three entries, each including a grant title, researcher name, amount, and start date.

Grants	Publications	Researchers	Institutions
301,672	518,228	63,442	5,894
2009 - now	2009 - now	2009 - now	2009 - now

Research Area	Count
General Medicine	55,489
Cancer Research	46,901
Immunology	46,396
Developmental Biology	40,448
Public Health, Environmental and Occupational Health	29,555

Researcher	Institution	Grants
Azadi, P.	UNIVERSITY OF GEORGIA	237
Woodland, D.L.	WADSWORTH CENTER	133
Dunnam, R.	CORNELL UNIVERSITY	127

Grant Title	Researcher	Amount	Start Date
Hardwiring Mechanism into Predicting Cancer Phenotypes by Computational Learning	Marchionni, L. (JOHNS HOPKINS UNIVERSITY)	\$400k	Apr 5, 2016
A Novel Drug Delivery System to Treat Peripheral Arterial Disease	Yazdani, K. (UNIVERSITY OF SOUTH ALABAMA)	\$413k	Apr 5, 2016
Effects of Psychological Stress on Arterial Stiffness	Logan, J.G. (UNIVERSITY OF VIRGINIA)	\$145k	Apr 5, 2016

Metrics in Profiles: Journals

Scopus
Search Sources Alerts Lists Help v
Register Sign in v
☰

Source details
Feedback > Compare sources >

Journal of Biomedical Science

Open Access ⓘ

Scopus coverage years: from 1993 to Present

Library subscription: from January 2009 to December 2099

Publisher: BioMed Central

ISSN: 1021-7770 E-ISSN: 1423-0127

Subject area: Medicine: Biochemistry (medical) v

Set document alert
Journal Homepage
Webcat Plus
Copac
More >

Visit Scopus Journal Metrics ⓘ

CiteScore 2015 ⓘ

3.07

SJR 2015 ⓘ

1.632

SNIP 2015 ⓘ

1.560

CiteScore
CiteScore rank & trend
Scopus content coverage

CiteScore rank 2015 v
In category: Biochemistry (medical) v
CiteScore trend

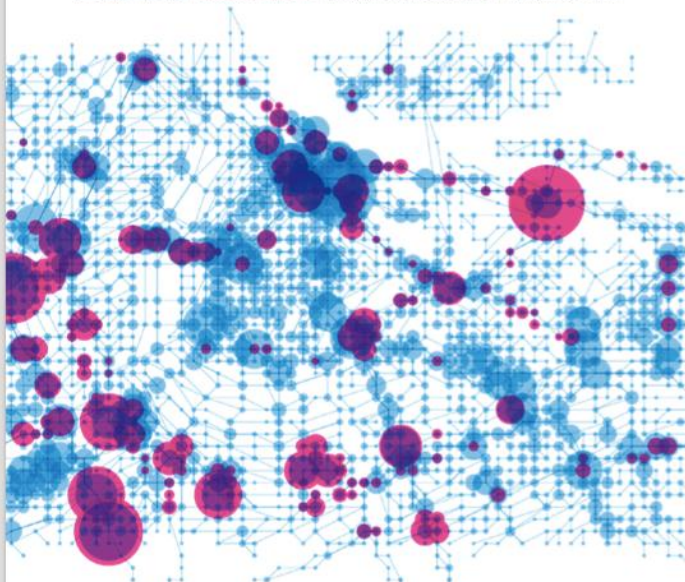
☆ #9 56	Journal of Biomedical Sciences	3.07	84th percentile
Rank	Source title	CiteScore 2015	Percentile
#1	Bioenterology	3.69	99th percentile
#2	Hormones and Cancer	3.58	94th percentile

Year	CiteScore Value	Percentile in Category
2011	~2.4	~75
2012	~3.0	~85
2013	~3.5	~88
2014	~3.5	~88
2015	~3.3	~88

Metrics for Analysis

Mapping Research and Innovation Understanding Amsterdam's Competitive Advantage

CITY COMPETITIVENESS RESEARCH STRENGTHS RESEARCH TO COMMERCIALIZATION MUNICIPAL TO GLOBAL



11× Comparator Cities

AMSTERDAM BARCELONA BERLIN BRUSSELS COPENHAGEN DUBLIN
HAMBURG MADRID MANCHESTER STOCKHOLM VIENNA

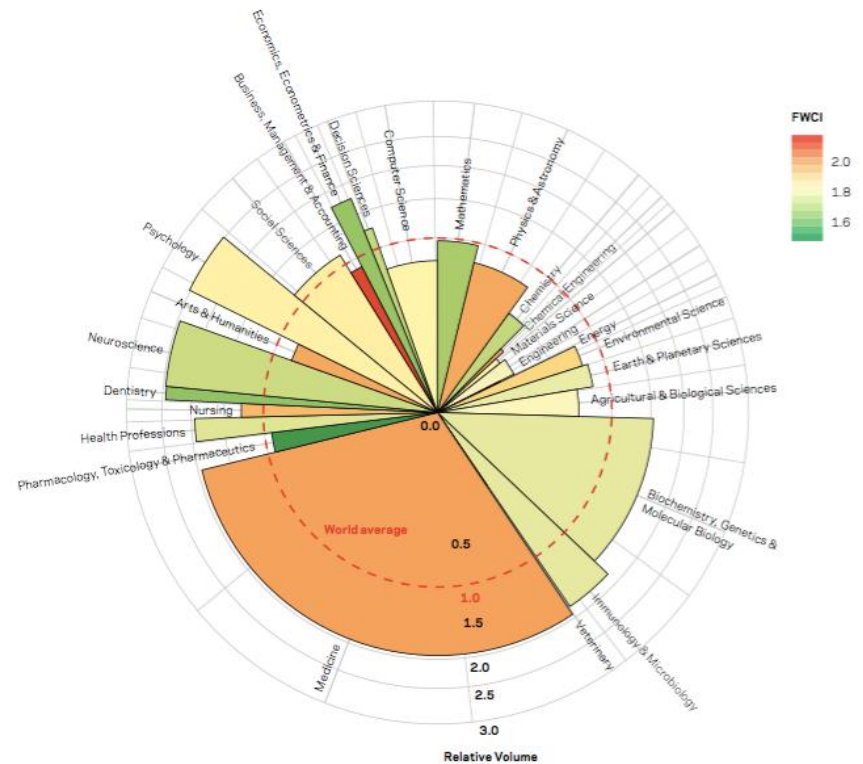


Figure 2.1 — Radar pie graph of Amsterdam's publications by subject area, where absolute publication volume corresponds to size of the pie slices, field-weighted citation impact corresponds to color, and relative publication volume corresponds to the height of the pie slice, from 2004 to 2013. Source: Publication data from Scopus®

SciVal

Home






Overview

Benchmarking

Collaboration

Trends

My SciVal

 Institutions and Groups Researchers and Groups Publication Sets Countries and Groups Research Areas

Research Areas



Type to filter











Entities provided by SciVal



All tags

[reset filters](#) Add to entity selection panel Edit tags Delete Share Name 

Tags

 Agricultural and Biological Sciences (12) Arts and Humanities (14) Biochemistry, Genetics and Molecular Biology (16) Business, Management and Accounting (11) Chemical Engineering (9) Chemistry (8) Computer Science (13) Decision Sciences (5)

Hide tags

- Institutions and Groups**
- Vrije Universiteit
- Harvard University
- University of Amsterdam
- University of Edinburgh
- University of Oxford
- + Add Institutions and Groups
- * Remove all entities from this section
- Researchers and Groups
- Publication Sets
- Countries and Groups
- Research Areas

Collaboration by Vrije Universiteit

Netherlands | [More details on this Institution](#)

[View data sources](#)

2013 to 2015

Computer Science

[ASJC](#)

Current collaboration Potential collaboration

Map Table

Export Shortcuts

Find Institution

Institutions collaborating with Vrije Universiteit

Worldwide

All sectors

← Filter for more (regional) detail or [filter by field](#) at the top of the page

423 collaborating Institutions 621 co-authored publications

