Elsevier Research Intelligence

Introducing the new SciVal

Peter Porosz

customer consultant

Elsevier

p.porosz@elsevier.com

Belgrade, January 2015.

Empowering Knowledge

Agenda

1. Elsevier overview
2. Elsevier Research Intelligence portfolio
3. SciVal overview
4. What can SciVal do for you?
5. Appendix
   - Pure overview
   - Analytical Services overview

Elsevier overview

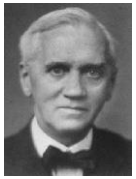
Solutions that help professionals across industries make better decisions, get better results and be more productive

Lead the way in advancing science, technology and health

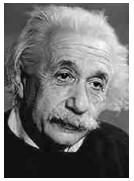
Marie Curie (Physics, Chemistry)

Louis Pasteur (Chemistry)

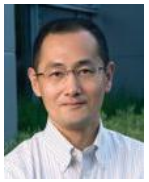
Alexander Fleming (Medicine)



Albert Einstein (Physics)



Shinya Yamanaka (Medicine)



John C. Mather (Physics)

Francoise Barre-Sinoussi (Medicine)

Craig C Mello (Medicine)

Galileo's last and greatest work, published in 1638 by Elzevir, Discorsi e Dimostrazioni Matematiche

ELSEVIER

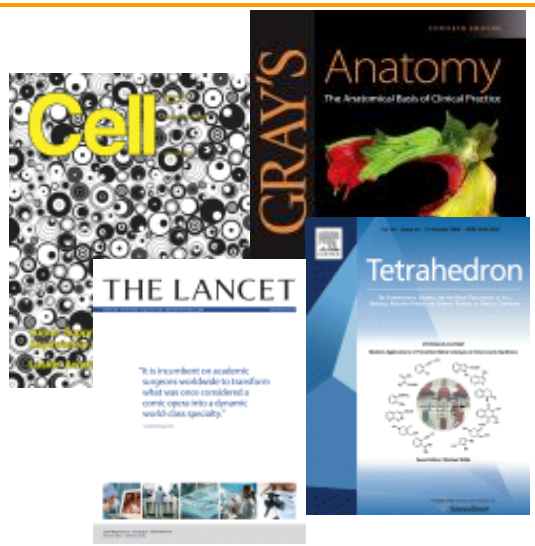
425·125

YEARS OF PUBLISHING

TRADITION | EXCELLENCE

1580 · 1880 · 2005

We commemorate the founding of the House of Elzevir in 1580 and celebrate the establishment of the Elsevier company in 1880.



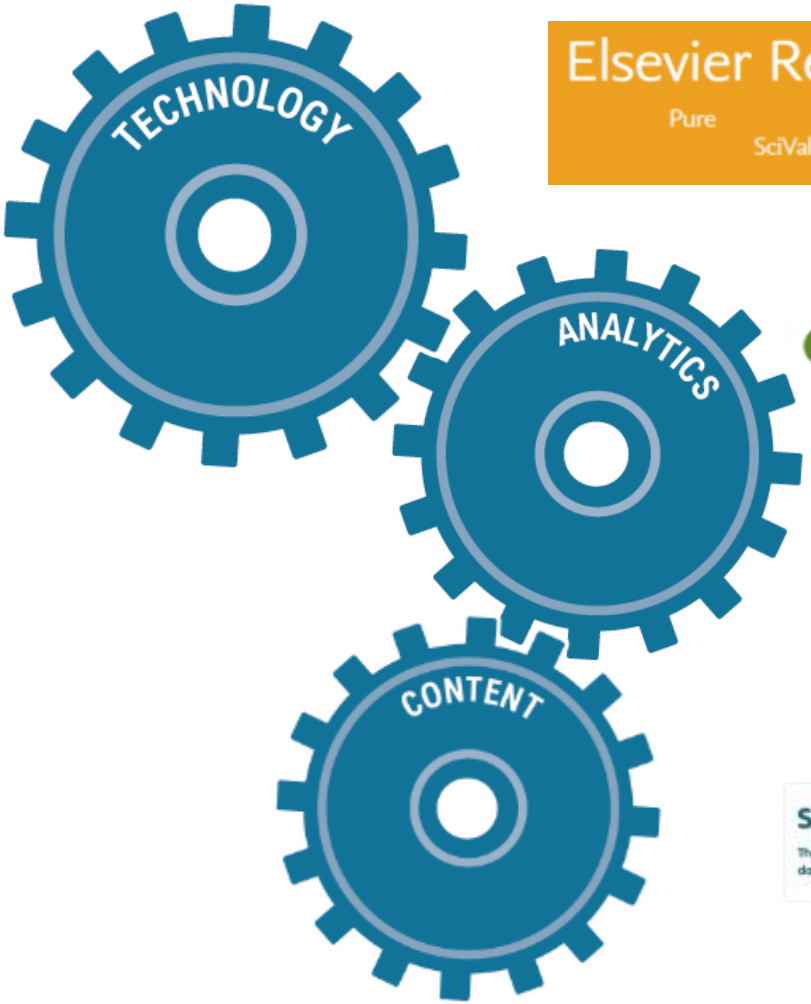
Scopus

SciVal

ScienceDirect

Knovel®

Engineering Village



Elsevier Research Intelligence

Pure Analytical Services SciVal

CLINICAL KEY

MENDELEY

Scopus

The largest abstract and citation database of peer-reviewed literature.

Content + Technology and Analytics

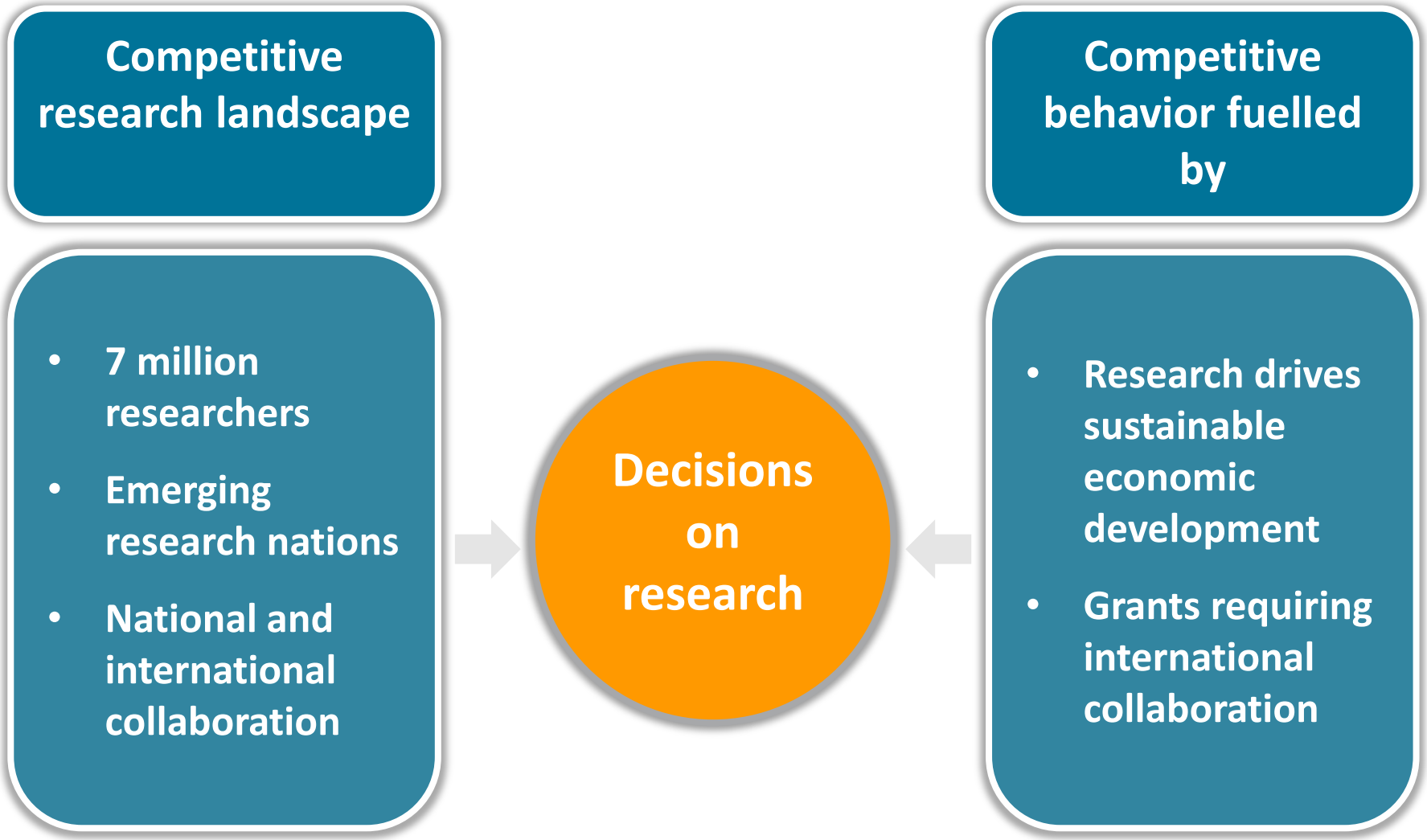
= Improved Outcomes

Elsevier Research Intelligence Portfolio

ELSEVIER

Empowering Knowledge

User needs addressed by Elsevier Research Intelligence



Decisions by “triangulating” information

Elsevier Research Intelligence

Reliable data

Your Scientists

Expert opinion

External Review

Peer review

Elsevier Research Intelligence portfolio

What we offer

CORE

SciVal (External View)

Ready-to-use tools to analyze the world of research, and to establish, execute and evaluate optimized strategies for the research organization.

Modules:

- Overview
- Benchmarking
- Collaboration
- Funding

Pure (Internal View)

Comprehensive research information management system to enable evidence-based decisions, promote collaboration, simplify administration and optimize impact.

Modules:

- Administration
- Reporting
- Import
- CV
- Award Management
- Assessment
- Portal (Experts, Institutional)

Analytical Services

Customized analysis, reports and services.

- Analytical Report Services
- Data Integration Services
- Reviewer Finder
- Custom Solution for Funders
- Scopus Custom Data
- Author Profile Refinement Services
- Fingerprint Engine

COMPLEMENTARY TOOLS AND RESOURCES

Scopus

The largest abstract and citation database of peer-reviewed literature; the broadest source of global, relevant scientific research, with tools that track, analyze and visualize research.

Mendeley

A free reference manager and academic social network that can help organize research, collaborate with others online, and discover the latest research, as well as other meaningful trends in global research activity.

What we support

Who we support

- **Research Institutions**
- **Funders**
- **Policy makers**
  - Provosts
  - Vice Chancellors Research
  - Research Administrators/ Development Professionals
  - Researchers
  - Research Managers
  - Department Heads
  - Librarians
  - Students
  - Communications Professionals
  - Technology Transfer Officers
  - Grant Managers
  - Legislators
  - Economic Development Officers

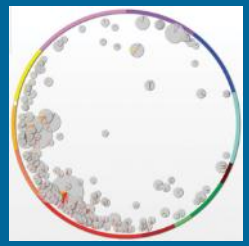
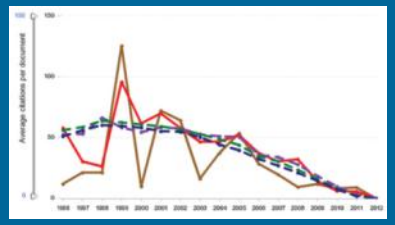
www.elsevier.com/research-intelligence

SciVal overview

ELSEVIER

Empowering Knowledge

SciVal Spotlight and Strata – the first generation

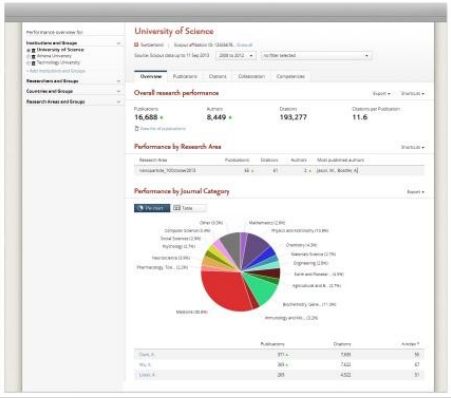
	Spotlight	Strata
Approach	 Innovative	 Traditional
Framework	Pre-defined structure, ready-to-go	Flexible set-up, view and interrogation
Level	Overview / snapshot	Detailed / granular
Data	Updated annually Institutions & countries Show only strengths	Updated weekly Researchers & groups Show everything

SciVal in a nutshell

SciVal offers quick, easy access to the research performance of 220 nations and 4,600 research institutions worldwide, and groups of institutions

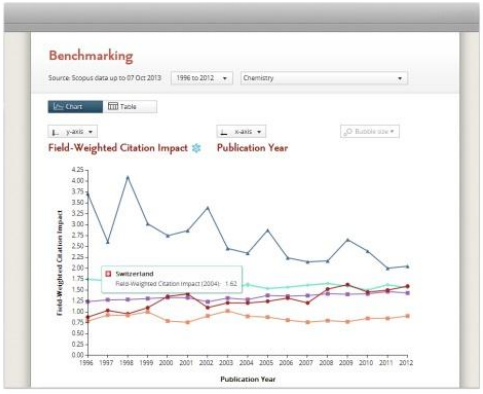
Visualize research performance

Ready-made-at a glance snapshots of any selected entity



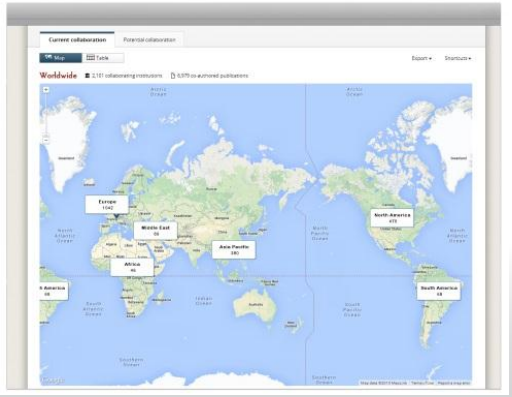
Benchmark your progress

Flexibility to create and compare any research groups



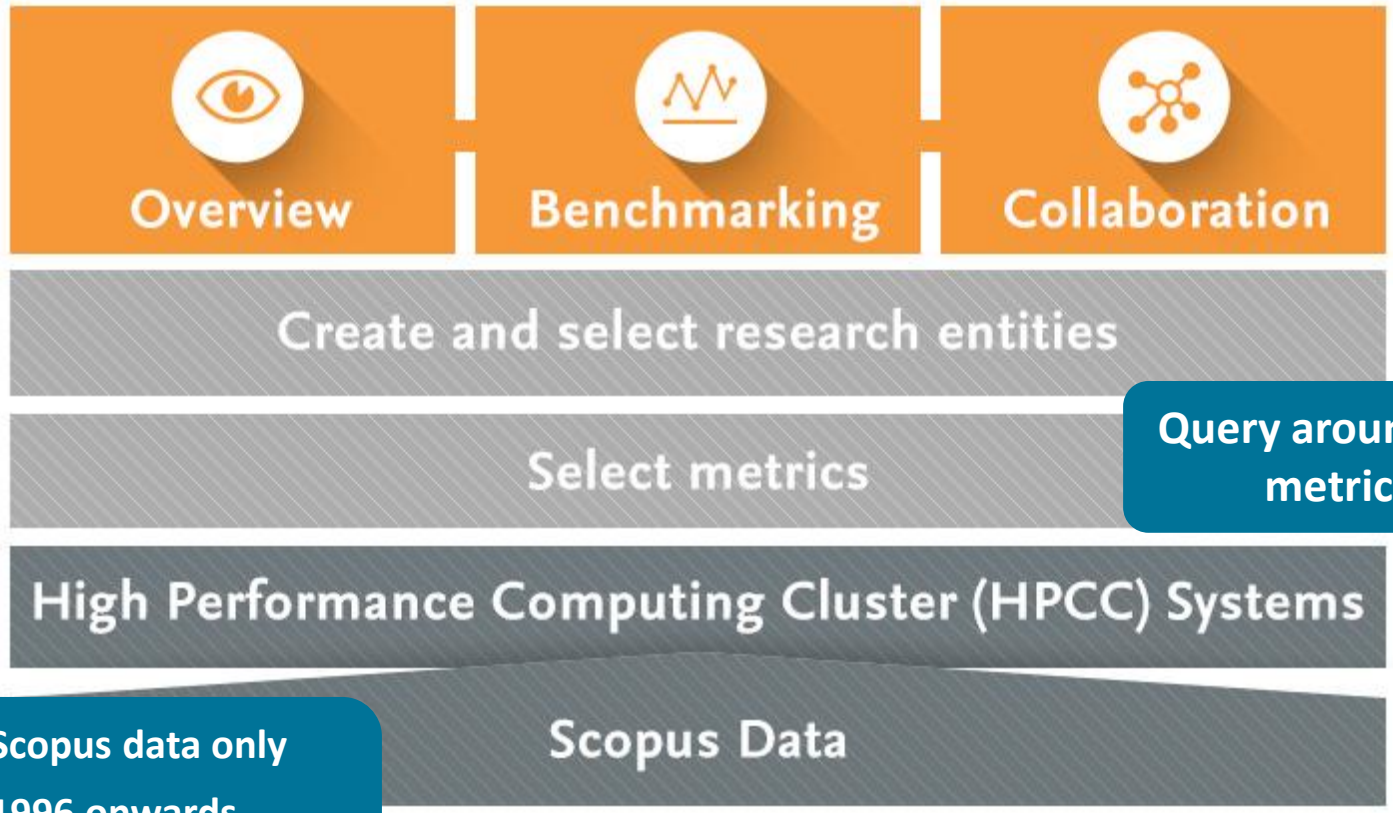
Develop collaborative partnerships

Identify and analyze existing and potential collaboration opportunities



The layers of SciVal

Using advanced data analytics super-computer technology, SciVal allows you to instantly process an enormous amount of data to generate powerful data visualizations on-demand, in seconds.



Query around 75 trillion metric values

- **Scopus data only**
- **1996 onwards**
- **Weekly update**

About Scopus®

Scopus

- The **largest** abstract and citation database of research information with over **53 million** records
- Updated daily, includes:
  - **21,000+ titles** from more than **5,000 international** publishers (independent review board)
  - **20,000+ peer-reviewed journals** (including 2,800 open access journals)
  - **367 trade publications**
  - **421 book series**
  - **30,000 books** (75,000 by 2015)
  - **5.5 million conference papers**
  - **"Articles-in-Press"** from more than **3,750 journals** and publishers
- Coverage of:
  - Life Sciences
  - Health Sciences
  - Physical Sciences
  - Social Sciences
  - Arts and Humanities
- Cited Reference expansion of pre-1996 references (back to **1970** by 2016)
- Independent journal metrics:
  - **SNIP**: The Source-Normalized Impact per Paper
  - **SJR**: The SCImago Journal Rank
- Connectivity with ORCID

What can SciVal do for you?

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Empowering Knowledge

Benefits for a broad range of users

SciVal supports the needs of a broad range of institutional users by providing ready-made, at-a-glance snapshots for flexible, institution-specific insight

Vice chancellors of research

- 360 degree Performance Overview to inform strategic planning
- Identify institution's strengths and short-comings

Research administrators

- Create management-level reports
- Accelerate institutional and cross-institutional collaboration
- Support and win large grants

Department heads

- Evaluate researcher and team performance for recruitment and retention decisions
- Model-test scenarios by creating virtual teams

Researchers

- Raise visibility and highlight achievements
- Expand networks
- Locate collaborators and mentors

What are the questions addressed using SciVal?

"How can we demonstrate excellence in a way that best shows our unique strengths to secure funding and attract students?"

"I want to explore the various scenarios I'm considering to set up a centre of excellence. How can the data provide me with insights?"

"My VC is going to China; who do our academics collaborate with there and how can we expand?"

"I want to benchmark my institute, and my departments want to benchmark themselves. How can we all do this according to our different realities?"

Overview

"How can we demonstrate excellence in a way that best shows our unique strengths to secure funding and attract students?"

SciVal

SciVal User ▾ Help ▾

Home | Overview | Benchmarking | Collaboration | My SciVal

View overview of:

Institutions and Groups
- Northwestern University
- University of Geneva
- Peking University
- University of Cambridge
- Arizona
+ Add Institutions and Groups

Researchers and Groups

Publication Sets and Groups

Countries and Groups

Research Areas and Groups

Northwestern University

United States | Scopus affiliation ID: 60001590... Show all

Source: Scopus data up to 24 Feb 2014 | 2009 to 2013 ▾ | no filter selected ▾

Summary | Publications | Citations | Collaboration | Competencies

Overall research performance

Export ▾ Shortcuts ▾

Publications	Authors	Citations	Citations per Publication
35,755 ▲	21,026 ▲	340,793	9.5

View list of publications

Performance by Research Area

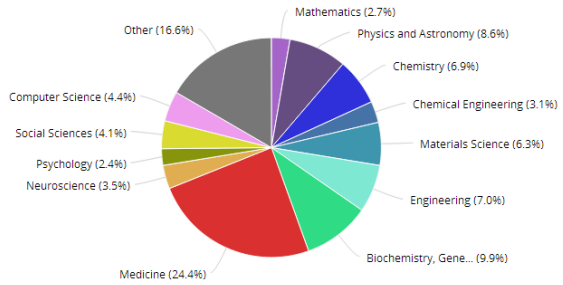
Export ▾ Shortcuts ▾

Research Area	Publications	Citations	Authors	Most published authors
Graphene - 7 April 2014	57 ▼	3,544	93 ▼	Huang, J., Cote, L.J., Kim, J.

Performance by Journal Category

Export ▾

Pie chart | Table



Top authors

Export ▾

Top 5 authors at Northwestern University, by number of publications ▾

	Publications	Citations	*h*-index *
Anastassov, A.	391	8,091	60
Schmitt, M.	358	7,787	62
Stoynev, S.	246	5,779	41
Kanatzidis, M.G.	244	4,816	60
Kubik, A.	238	5,624	35

* *h*-index is based on an author's publications from 1996 onwards

Top collaborating Institutions

Export ▾ Shortcuts ▾

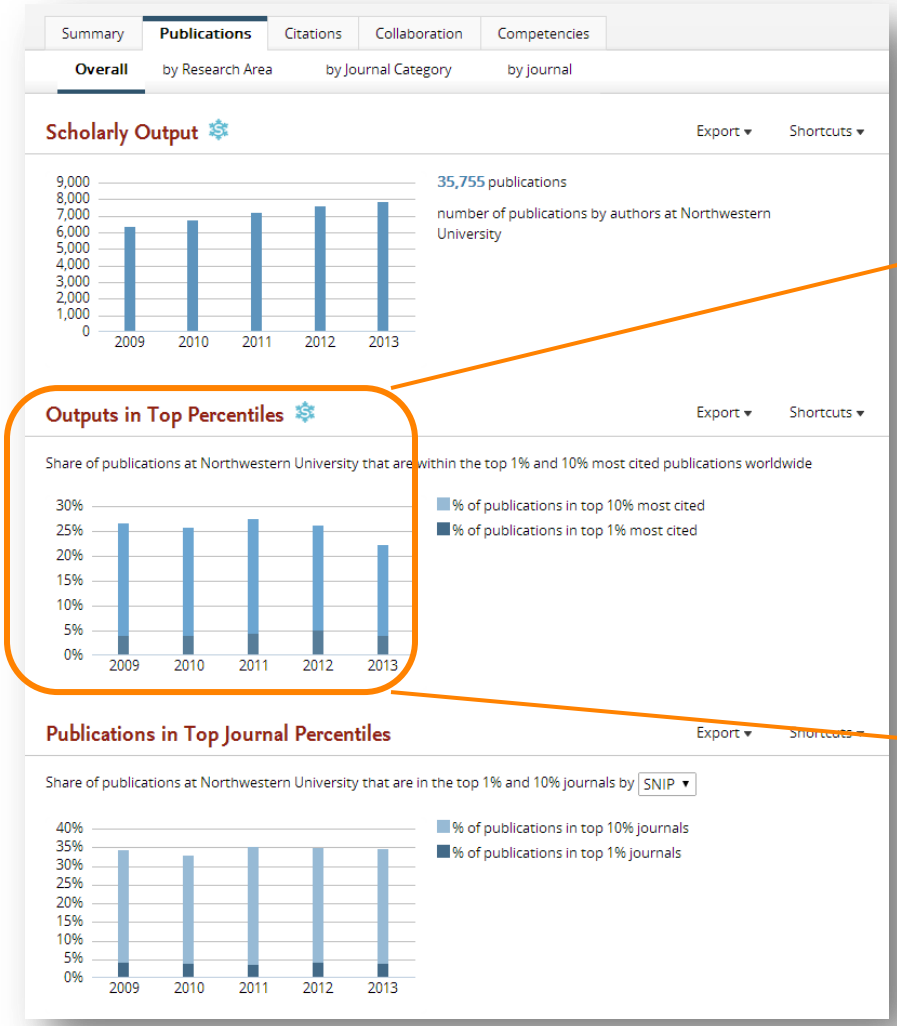
by number of publications co-authored with Northwestern University

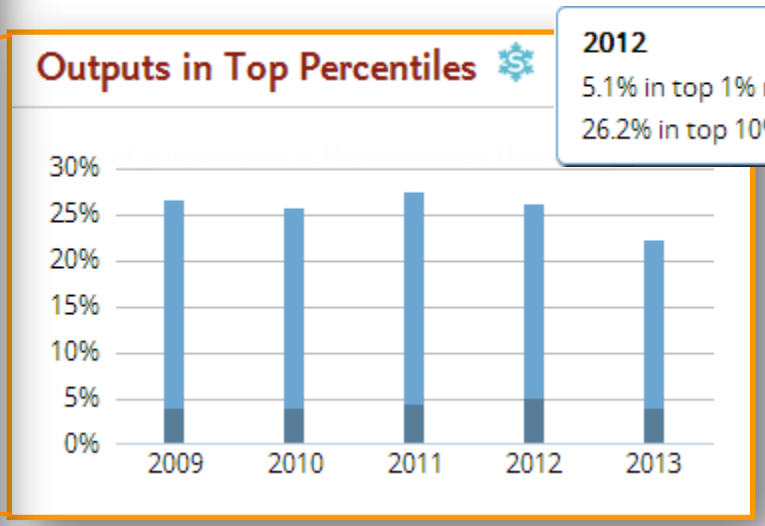
	Institution	Co-authored publications	Citations received for co-authored publications	Co-authors
1.	Harvard University	1,613 ▲	33,481	2,223 ▲
2.	Johns Hopkins University	1,281 ▲	30,637	1,317 ▲
3.	University of Chicago	1,272 ▲	22,420	1,527 ▲
4.	University of Illinois at Chicago	1,252 ▲	16,420	1,204 ▲
5.	University of California at Los Angeles	1,236 ▲	28,014	1,202 ▲
6.	University of Michigan	1,133 ▲	22,341	1,013 ▲
7.	Argonne National Laboratory	1,019 ▲	17,223	765 ▲
8.	University of Wisconsin	911 ▲	19,410	922 ▲
9.	University of Washington	909 ▲	19,420	902 ▲
10.	University of Rochester	896 ▲	17,075	620 ▼

View the disciplinary focus of your institutions and your top researchers

Overview

Look through different metrics to identify ones that demonstrates your institution's research excellence



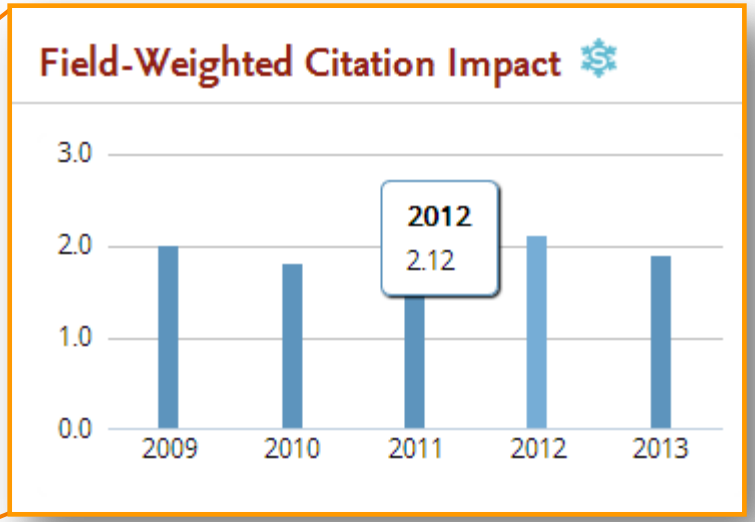


2012
5.1% in top 1% most cited
26.2% in top 10% most cited

See how many of your publications fall into the top 1% and 10% of the most cited articles in the world

Overview

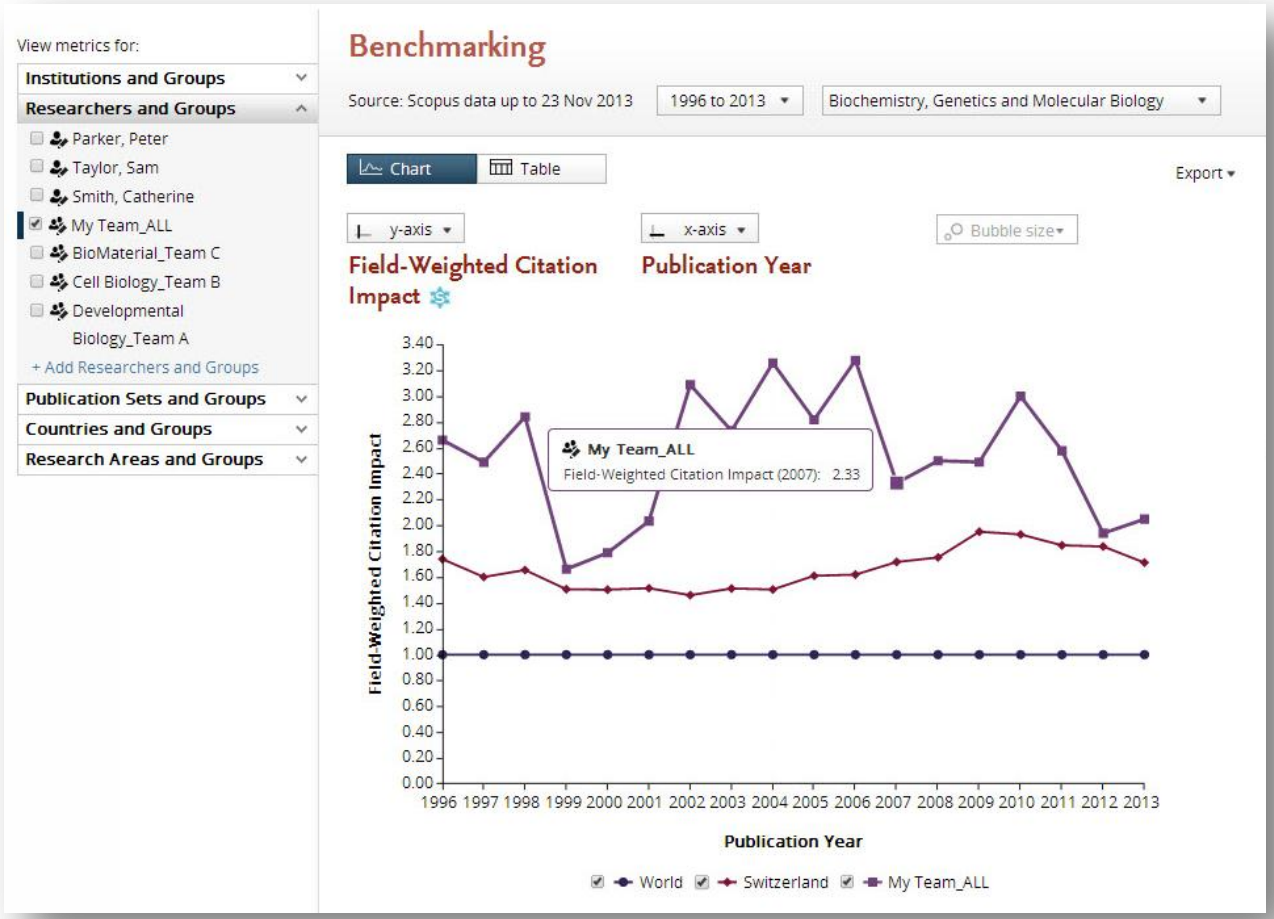
Look through different metrics to identify ones that demonstrates your institution's research excellence



View Field-Weighted Citation Impact that normalizes citation behavior for differences in size, field and publication-type

Benchmarking

"I want to explore the various scenarios I'm considering to set up a centre of excellence. How can the data provide me with insights?"



Test scenario by creating virtual teams and compare using multiple metrics

17 sets of metrics at your disposal

Slice and dice your data from multiple angles to identify your core strengths and weaknesses

Productivity metrics

- Scholarly Output
- *h*-indices (*h*, *g*, *m*)

Citation Impact metrics

- Citation Count
- Citations per Publication
- Cited Publications
- *h*-indices (*h*, *g*, *m*)
- Field-Weighted Citation Impact
- Publications in Top Percentiles
- Publications in Top Journal Percentiles
- Collaboration Impact (geographical)
- Academic-Corporate Collaboration Impact

Collaboration metrics

- Authorship Count
- Number of Citing Countries
- Collaboration (geographical)
- Academic-Corporate Collaboration

Disciplinarity metrics

- Journal count
- Journal category count

Snowball Metric; www.snowballmetrics.com/metrics

SciVal Metrics Guidebook

This comprehensive metrics guidebook is intended to be a straightforward, practical companion for you to find the right metrics to meet your objectives.

Example 4: Number of Citing Countries

Scenario: The user would like to calculate the Number of Citing Countries of an entity that consists of 6 publications. They have not selected any viewing or calculation options. Say that this entity has received 6 citations from publications A, B, C, D, E and F.

	Entity with 6 Publications					
	Publication 1	Publication 2	Publication 3	Publication 4	Publication 5	Publication 6
Cited by: Publication A	Yes				Yes	
Cited by: Publication B			Yes		Yes	
Cited by: Publication C	Yes	Yes			Yes	Yes
Cited by: Publication D	Yes	Yes		Yes		Yes
Cited by: Publication E	Yes	Yes		Yes		Yes
Cited by: Publication F		Yes			Yes	

Scenario: The citing publications A, B, C, D, E and F have the following affiliation information:

Citing Publication	Authors	Institutions	Country
Publication A	A3	I4	C2
Publication B	A1 A3 A5	I1 I4 I2	C1 C2 C1
Publication C	A1 A2	I1 I3 I2	C1 C2 C1
Publication D	A1 A6	I1 I1	C1 C1
Publication E	A1 A3 A5	I1 I3 I1	C1 C2 C1
Publication F	A1 A3 A2	I1 I3 I1	C1 C4 C1

Question: How do I calculate the number of Citing Countries?

Answer: Count the number of distinct countries in the affiliations of the citing publications.

Number of Citing Countries = 4

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4.9 Metric: Field-Weighted Citation Impact

Field-Weighted Citation Impact in SciVal indicates how the number of citations received by an entity's publications compares with the average number of citations received by all other similar publications in the data universe: how do the citations received by this entity's publications compare with the world average?

- A Field-Weighted Citation Impact of 1.00 indicates that the entity's publications have been cited exactly as would be expected based on the global average for similar publications; the Field-Weighted Citation Impact of "World", or the entire Scopus database, is 1.00
- A Field-Weighted Citation Impact of more than 1.00 indicates that the entity's publications have been cited more than would be expected based on the global average for similar publications; for example, 2.11 means 111% more cited than world average
- A Field-Weighted Citation Impact of less than 1.00 indicates that the entity's publications have been cited less than would be expected based on the global average for similar publications; for example, 0.87 means 13% less cited than world average

Similar publications are those publications in the Scopus database that have the same publication year, publication type, and discipline, as represented by the Scopus journal classification system:

- Publications can be assigned to a classification system in 2 ways:
  - **"Journal-driven" assignment** assumes that every publication within a journal fits within the same discipline(s) as the journal's scope. Each publication automatically adopts the subject classifications that are assigned to the journal. This method of assignment is suitable for journals that are focused in a core field, and do not tend to include publications that are also a relevant to other fields
  - **"Publication-driven" assignment** assumes that publications within a journal may have additional or different relevance to fields outside the core focus of the journal's scope. Publication-driven assignment offers the benefit of being able to assign individual publications from a journal separately to their relevant classifications. This is important for publications in multi-disciplinary journals
- Field-Weighted Citation Impact uses "publication-driven" assignment
- Publications are allocated to the classification Sub-category level, and can be allocated to more than 1 Sub-category. When we calculate the expected citations for similar publications, it is important that these multi-category publications do not exert too much weight; for example, if a publication P belongs to both in both parasitology and microbiology, it should not have double the influence of a publication that belongs to only one or the other Sub-category. This is accounted for in SciVal by distributing publication and citation counts equally across multiple journal categories; publication P would be counted as 0.5 publications for each of parasitology and microbiology, and its citations would be shared equally between these Sub-categories

SciVal Metrics Guidebook 61

- **Understanding metrics**
  - Scopus as data source
- **Selection of appropriate metrics**
  - What affects their values, besides performance?
- **For each metric**
  - Situations in which they are useful
  - When to take care and how to address short-comings
  - Worked examples

Available for *free* from http://bit.ly/scival_metrics_guide

Collaboration

"My VC is going to China; who do our academics collaborate with there and how can we expand?"

SciVal

SciVal User ▾ Help

Home | Overview | Benchmarking | Collaboration | My SciVal

View collaboration by:

Institutions and Groups
- Northwestern University
- University of Geneva
- Peking University
- University of Cambridge
- Arizona
- + Add Institutions and Groups

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

Collaboration by Northwestern University

United States | Scopus affiliation ID: 60001590... Show all

Source: Scopus data up to 24 Feb 2014 | 2011 to 2013 | no filter selected

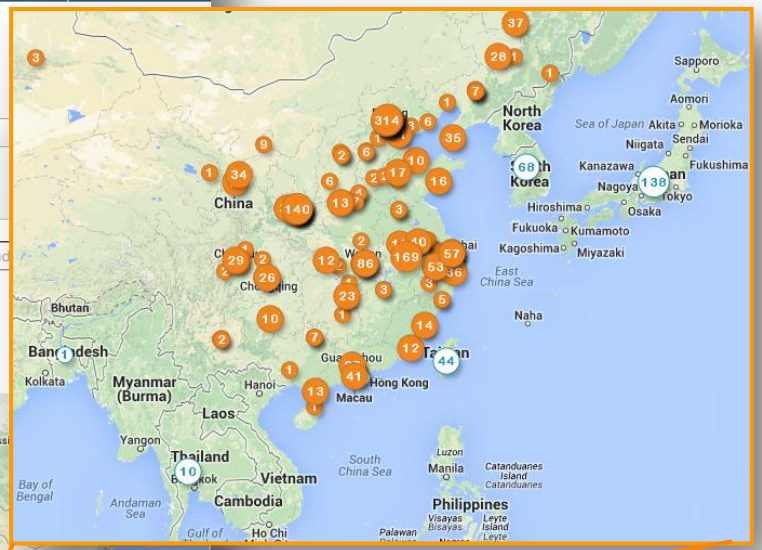
Current collaboration | Potential collaboration

Map | Table | Export ▾ | Shortcuts ▾

Institutions collaborating with Northwestern University

Worldwide | All sectors

2,424 collaborating Institutions | 14,432 co-authored publications



Drill into the Google map to identity your collaboration partners in China

Collaboration

Identify existing and potential collaboration partners

Collaboration by Northwestern University

United States | Scopus affiliation ID: 60001590... Show all

Source: Scopus data up to 24 Feb 2014 | 2011 to 2013 | no filter selected

Current collaboration | Potential collaboration

Map | Table | Export | Shortcuts | Find Institution

Institutions collaborating with Northwestern University

Asia Pacific | China | All sectors

276 collaborating Institutions | 2,641 co-authored publications

Institution	Co-authored publications	Co-authors at Northwestern University	Co-authors at the other institution	Citations
Peking University	314 ▲	269 ▲	339 ▲	5,872
CAS - Institute of High Energy Physics	225 ▲	130 ▲	182 ▲	6,774
University of Science and Technology of China	169 ▲	92 ▲	96 ▲	2,047
Xi'an Jiaotong University	140 ▲	202 ▲	237 ▲	819
	120		160 ▲	1,120

Collaboration

Assess the activity level and identify researchers

Collaboration with Peking University

Year range: 2011 to 2013

Export ▾ Shortcuts ▾

Overview | Current co-authors | Potential co-authors

Northwestern University

269 ▲ co-authors with Peking University

Total output of this Institution

Citations	126,894
Citations per Publication	5.6
Field-Weighted Citation Impact	2.00
Publications	22,682 ▲
Authors	16,013 ▲

Co-authored publications

314 ▲

View list of publications

Citations	5,872
Citations per Publication	18.7
Field-Weighted Citation Impact	4.53

Peking University

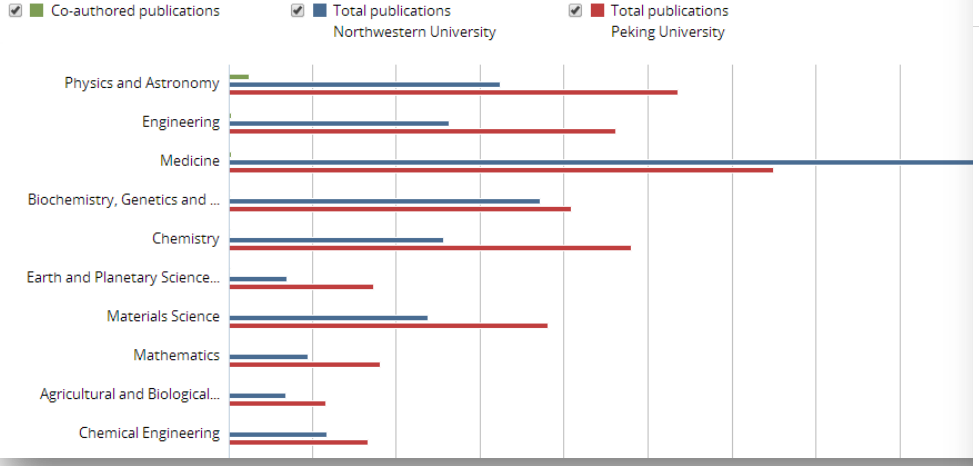
339 ▲ co-authors with Northwestern University

Total output of this Institution

Citations	97,514
Citations per Publication	3.6
Field-Weighted Citation Impact	1.34
Publications	27,348 ▲
Authors	28,847 ▲

Co-authored publications by Journal Category

Pie chart | Bar chart



Collaboration with Peking University

Year range: 2011 to 2013

Export ▾ Shortcuts ▾

Overview | Current co-authors | Potential co-authors

Northwestern University

Co-authors with Peking University

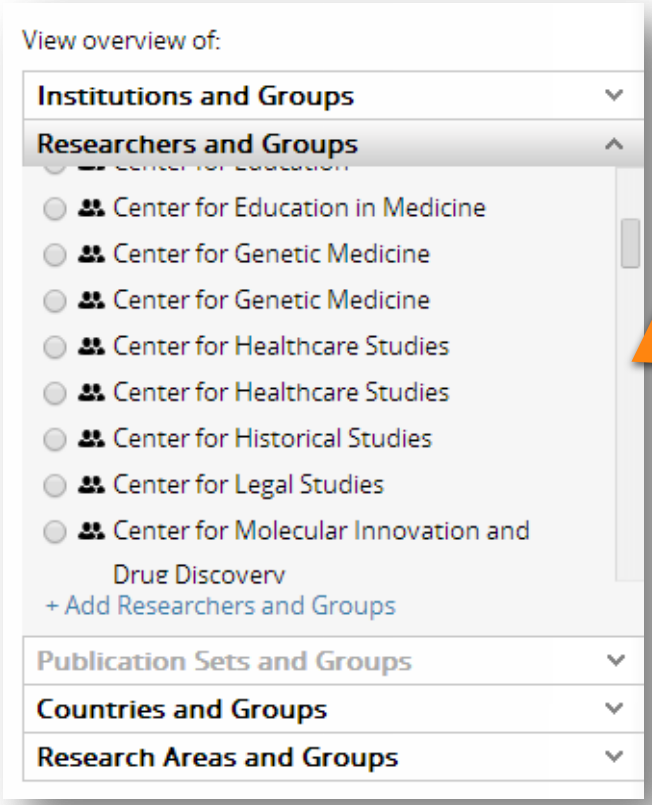
Author	Co-authored publications	Citations
▸ Stoynev, S.	206	4,708
▾ Odell, N.	205	4,701
142 co-authors at Peking University (top 10 shown)		
1. Guo, Y.	156	4,076
2. Zou, W.	149	3,975
3. Qian, S.J.	139	4,186
4. Asawatangtrakuldee, C.	139	2,947
5. Teng, H.	135	4,165
6. Mao, Y.	115	4,194
7. Guo, S.	112	4,170
8. Zhu, B.	112	4,170
9. Ban, Y.	86	1,687
10. Zhang, L.	81	2,287
▸ Kubik, A.	204	4,685
▸ Pozdnyakov, A.	198	4,627

Peking University

Co-authors with Northwestern University

Author	Co-authored publications	Citations
▸ Guo, Y.	164	4,205
▸ Zou, W.	155	4,087
▸ Qian, S.J.	147	4,313
▸ Asawatangtrakuldee, C.	146	3,033
▸ Teng, H.	143	4,292
▸ Mao, Y.	124	4,333
▸ Guo, S.	120	4,300
▸ Zhu, B.	120	4,300
▸ Ban, Y.	90	1,748
▸ Zhang, L.	88	2,402
▸ Ban, Y.	71	1,935
▸ Li, W.	63	1,640
▸ Wang, S.	59	1,523
▸ Liu, S.	56	529

"I want to benchmark my institute, and my departments want to benchmark themselves. How can we all do this according to our different realities?"



SciVal provides an option to:

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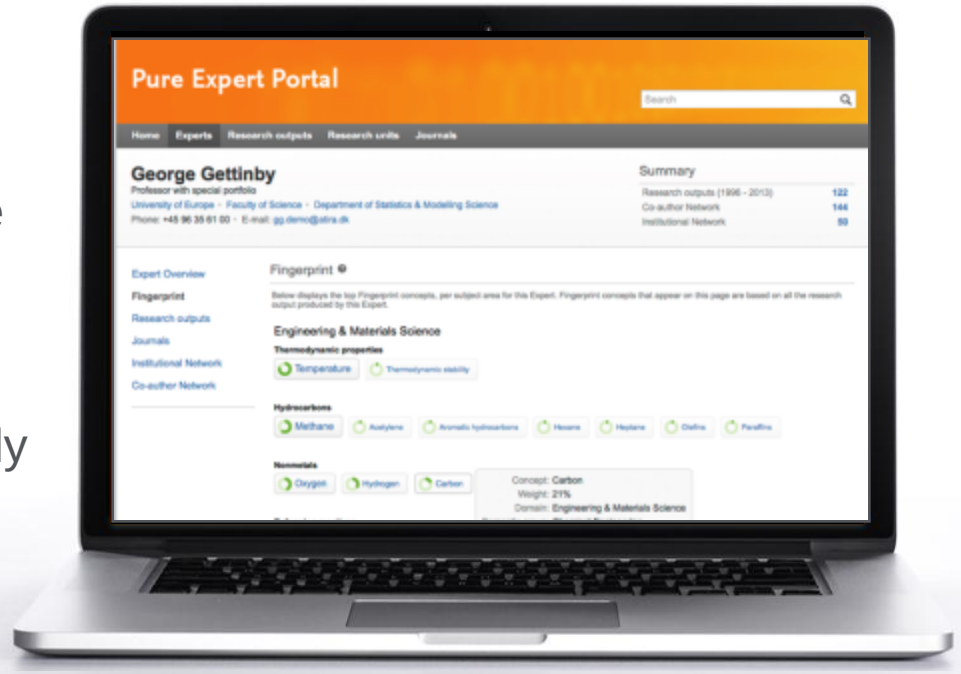

Every researcher profile delivers a comprehensive list of publications, coauthor and institutional networks, a list of similar experts and a semantic index, or Fingerprint™ visualization, of the researcher's distinctive expertise

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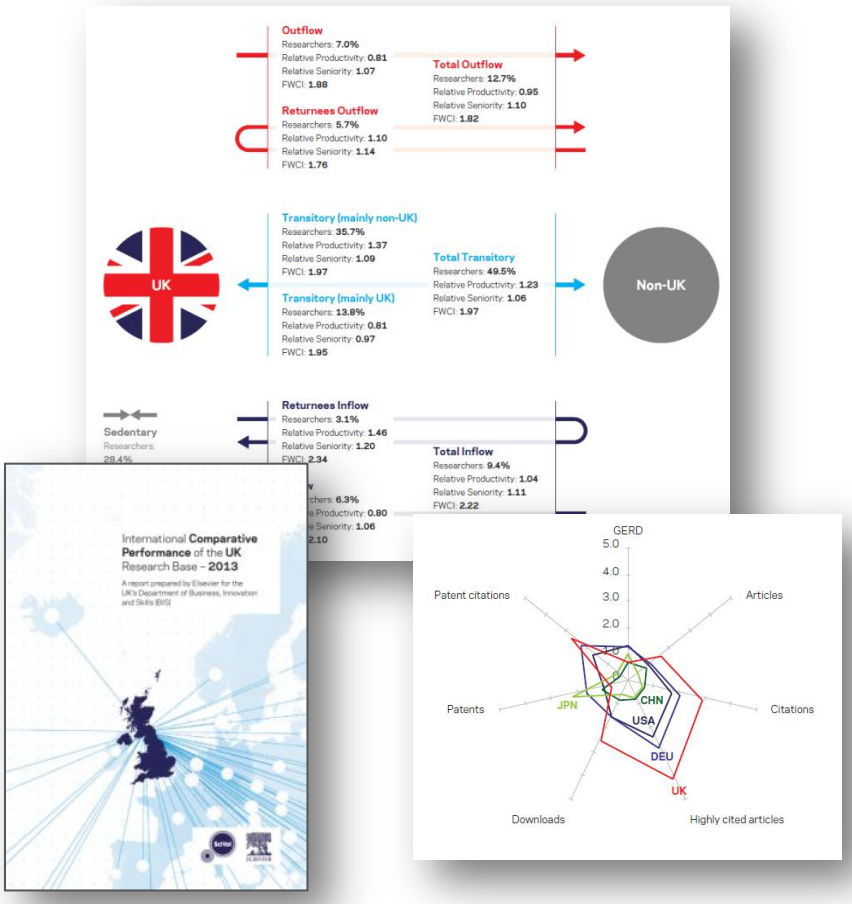
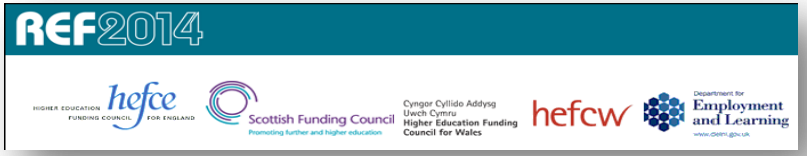


BIS Report: www.bis.gov.uk

Customized analysis and reports to measure research performance

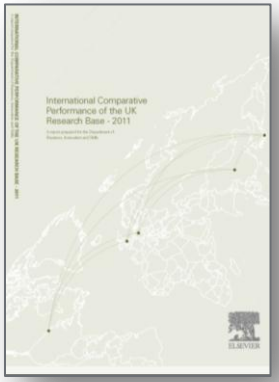
UK's national **Research Excellence Framework** assessment program, 2014



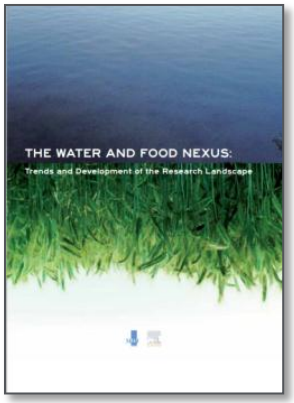
National **Excellence in Research for Australia** assessment program, 2012

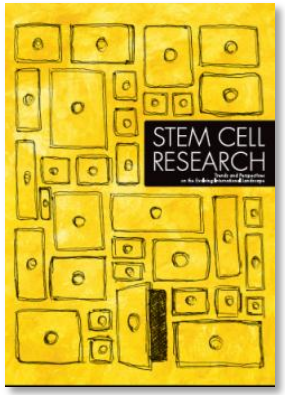
Science Europe report on European research collaboration and researcher mobility, 2013

International Comparative Performance of UK Research Base, UK (BIS), 2011 & 2013



The Water & Food Nexus, 2012
Stem Cell Research, 2013





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