Research Intelligence

SciVal
Mahidol University

December 2016
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Consultant, Research Management,
Elsevier

Empowering Knowledge

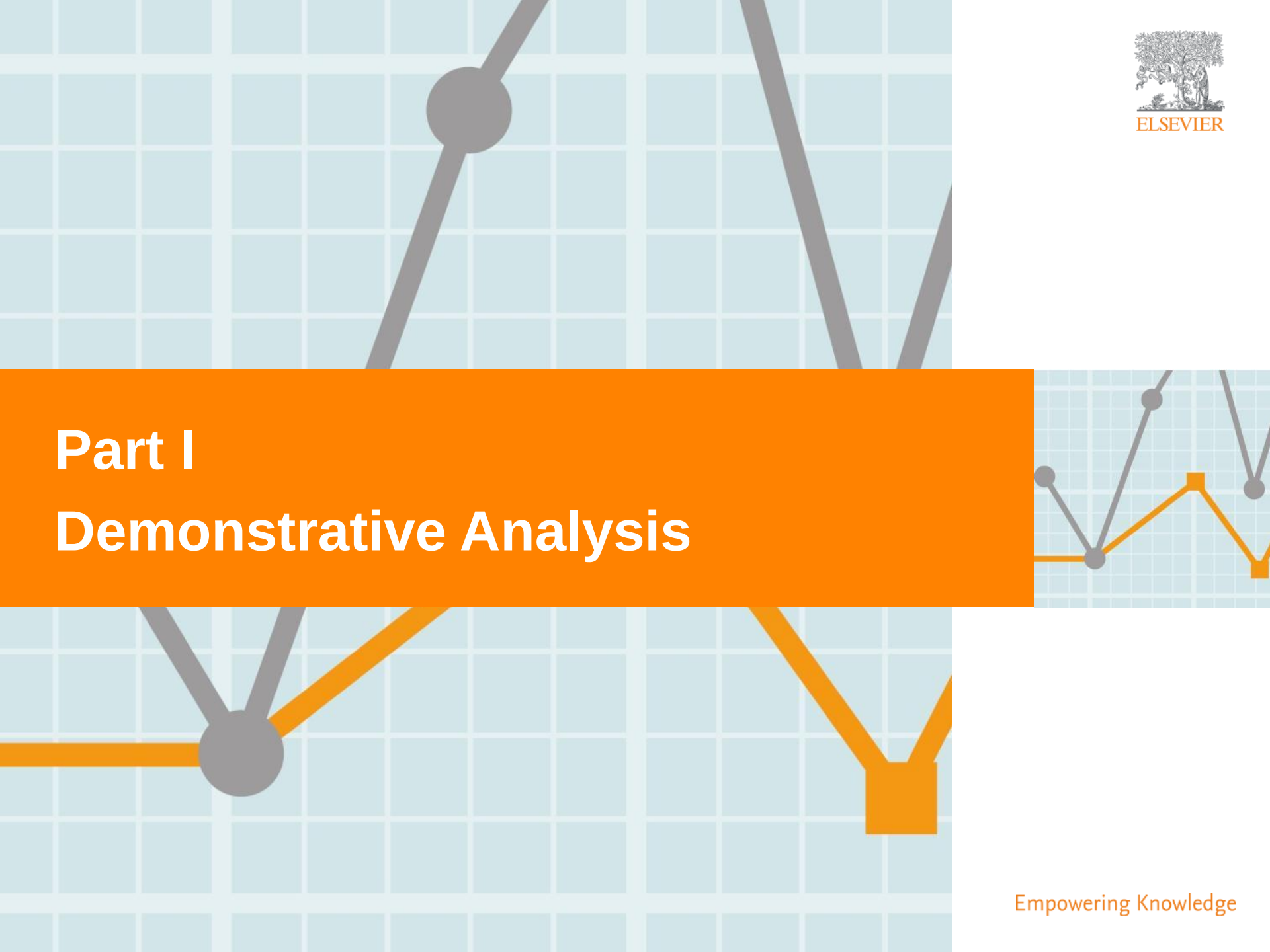
Agenda

Part I

- Demonstrative analysis
- Research Metrics
- Non-Performance Variables
- CiteScore

Part II

- Hands on SciVal training
- Setting up organizational structure
- Analysis
- Excercises


ELSEVIER
Part I
Demonstrative Analysis
Empowering Knowledge

Research Workflow & Metrics

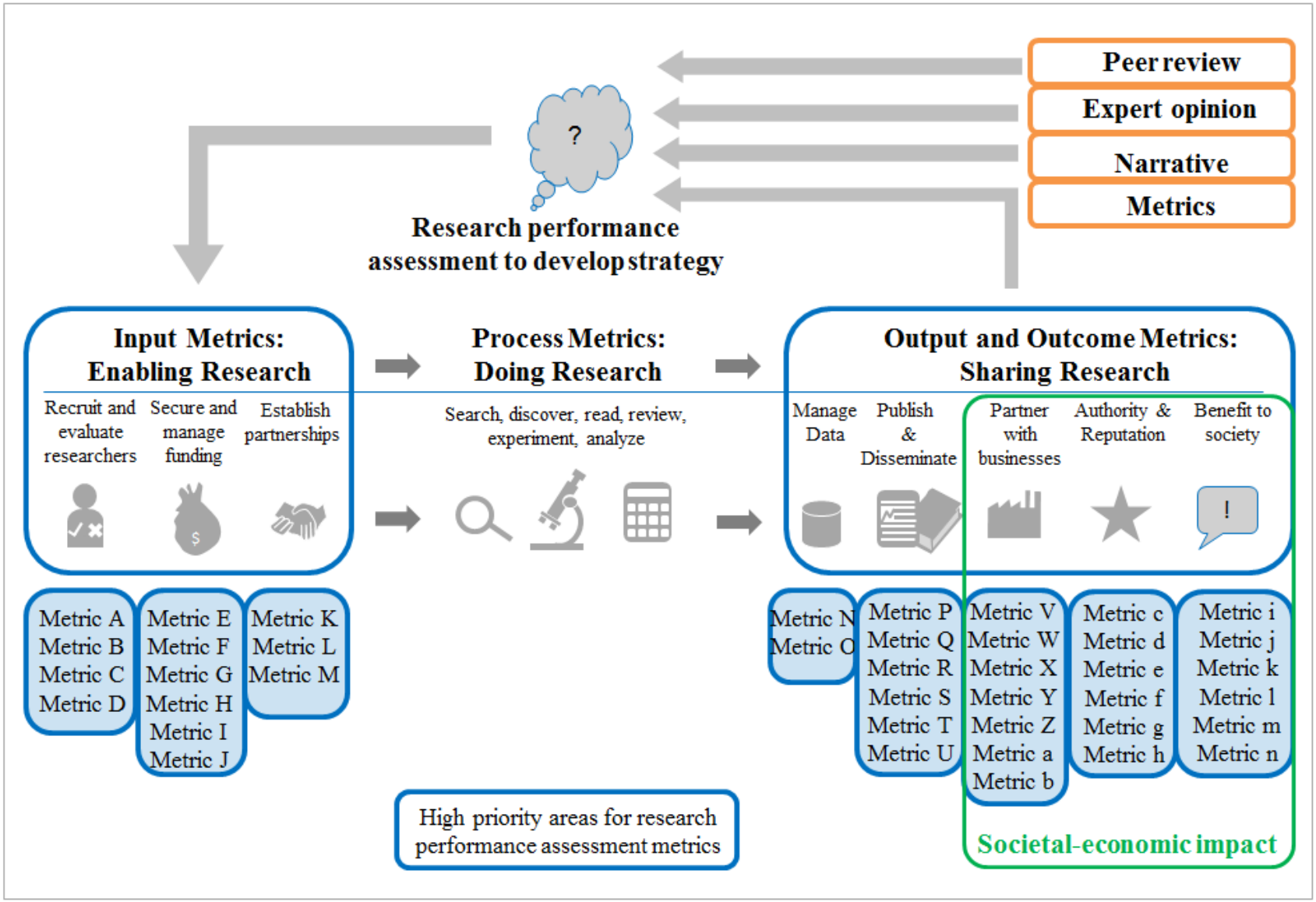


Figure 1 of http://www.elsevier.com/online-tools/research-intelligence/resource-library/resources/response-to-hefces-call-for-evidence-independent-review-of-the-role-of-metrics-in-research-assessment

Part I – Demonstrative Analysis

Objective

Demonstrate how analytics from SciVal can help Mahidol University achieve its goals.

Topics

1.) What are the key subject strengths & weaknesses of Mahdiol?

2.) How well is our Faculty of Medical Technology doing?

3.) Who are the top performing researchers of Faculty of Medical Technology?

4.) How much do the researchers in Faculty of Medical Technology publish in top quality journals?

5.) How has Mahidol's research contributed to Innovation?

6.) How does Mahidol publication output compare to other Thai Institutions?

7.) Who are the key collaboration partners of Mahidol?

8.) How well does Mahidol perform in "Dengue Vaccine" research?

9.) Who are the top performing institutions and researchers "Dengue Vaccine" research in

1.) What are the key subject strengths & weaknesses of Mahidol?

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MahidolUniversity

Overview Module

Mahidol's research is cited 10% more than world average level

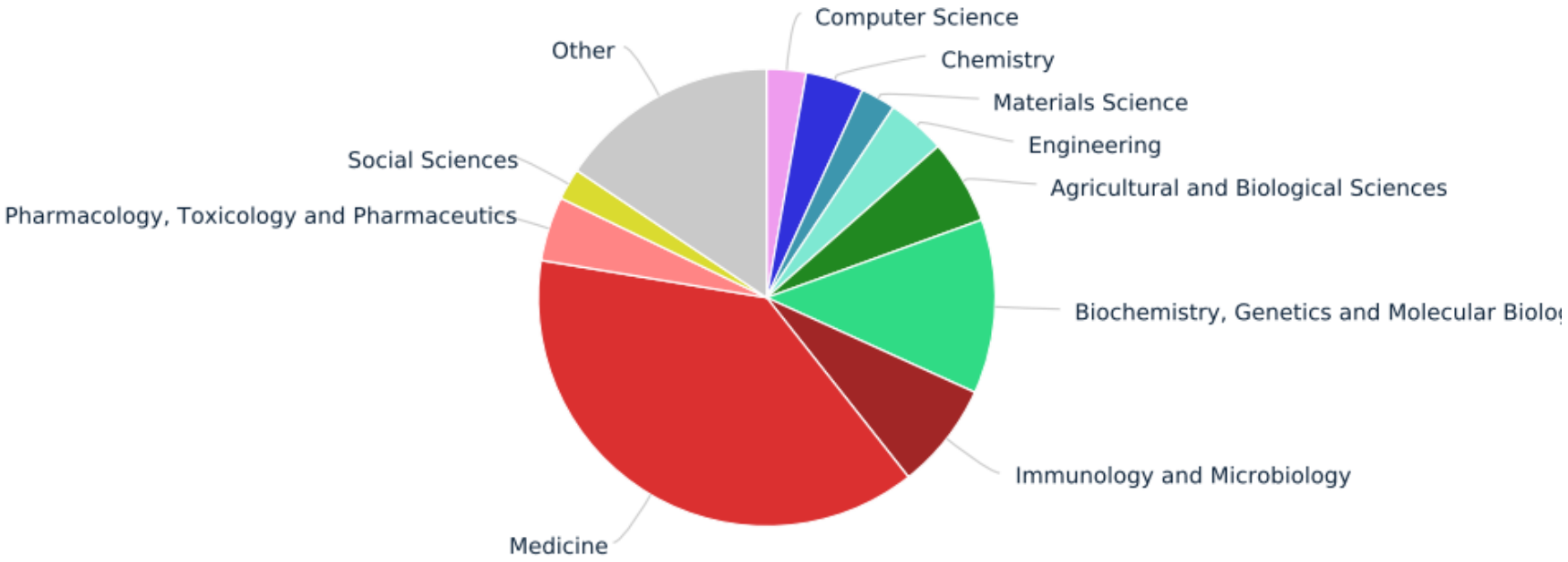
SciVal

Mahidol University

Year range: 2011 to 2015

Publications	Citations	Authors	Field-Weighted Citation Impact	Citations per Publication
9,887 ▲	72,257	8,251 ▲	1.10	7.3

Publications by Subject Area



Overview Module

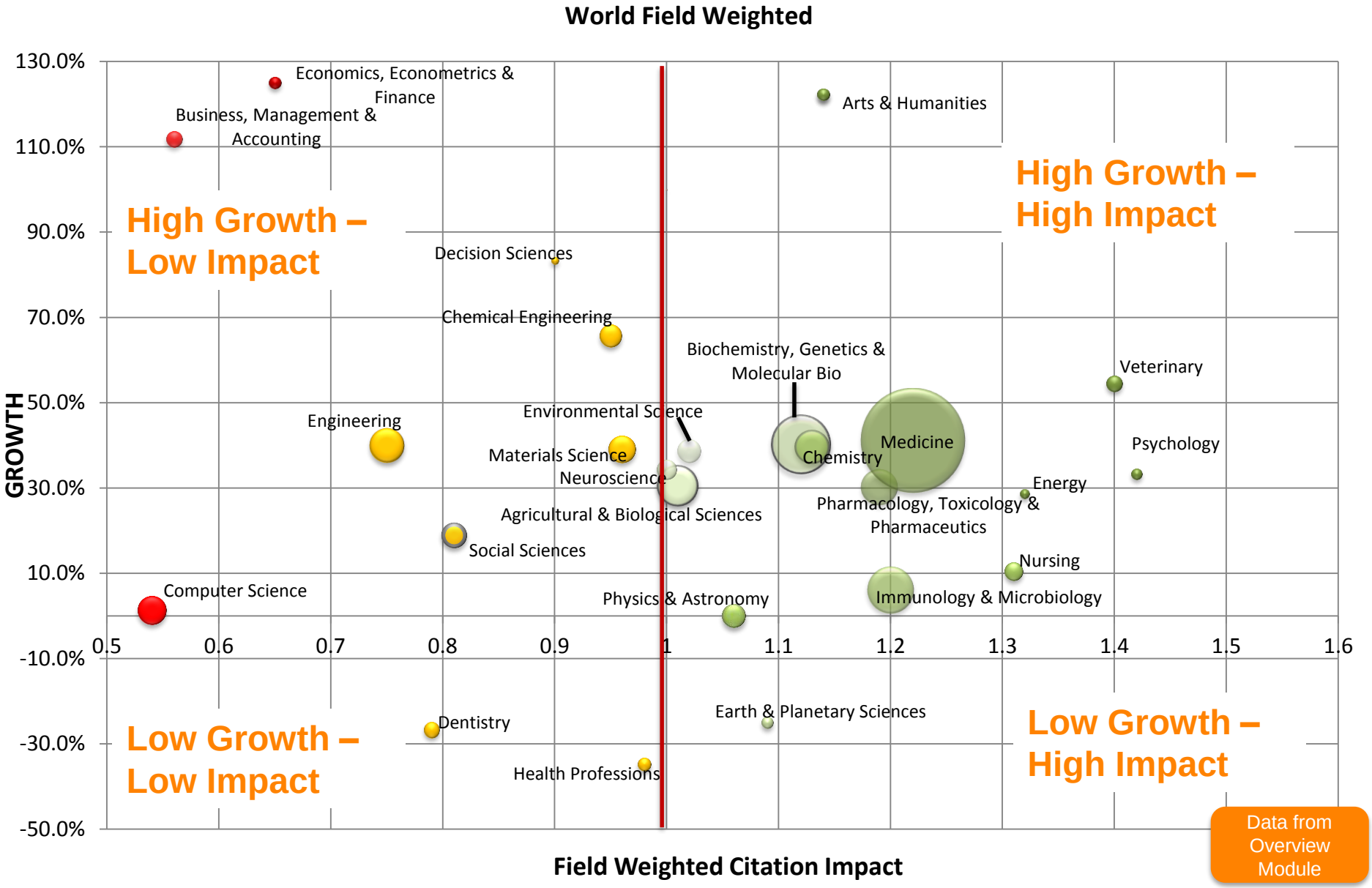
Mahidol Top Subject areas

2011 to 2015 ▾ | no subject area filter selected ▾

Subject Area	Publications	Field-Weighted Citation Impact
▼ Mahidol University	9,887 ▲	1.10
▶ Medicine	6,232 ▲	1.22
▶ Biochemistry, Genetics and Molecular Biology	2,007 ▲	1.12
▶ Immunology and Microbiology	1,229 ▲	1.20
▶ Agricultural and Biological Sciences	974 ▲	1.01
▶ Pharmacology, Toxicology and Pharmaceutics	742 ▲	1.19
▶ Engineering	674 ▲	0.75
▶ Chemistry	667 ▲	1.13
▶ Computer Science	454 ▲	0.54
▶ Materials Science	404 ▲	0.96
▶ Social Sciences	363 ▲	0.81
▶ Physics and Astronomy	316	1.06
▶ Environmental Science	298 ▲	1.02
▶ Chemical Engineering	277 ▲	0.95
▶ Mathematics	258 ▼	0.38
▶ Neuroscience	207 ▲	1.00

Output, Impact & Growth by Subject

Bubble size = # publications
X-axis = FWCI
Y-axis = Growth (publications)



Data from Overview Module

2.) How well is Mahidol Faculty of Medical Technology?

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Overview Module

Mahidol– Faculty of Medical Technology

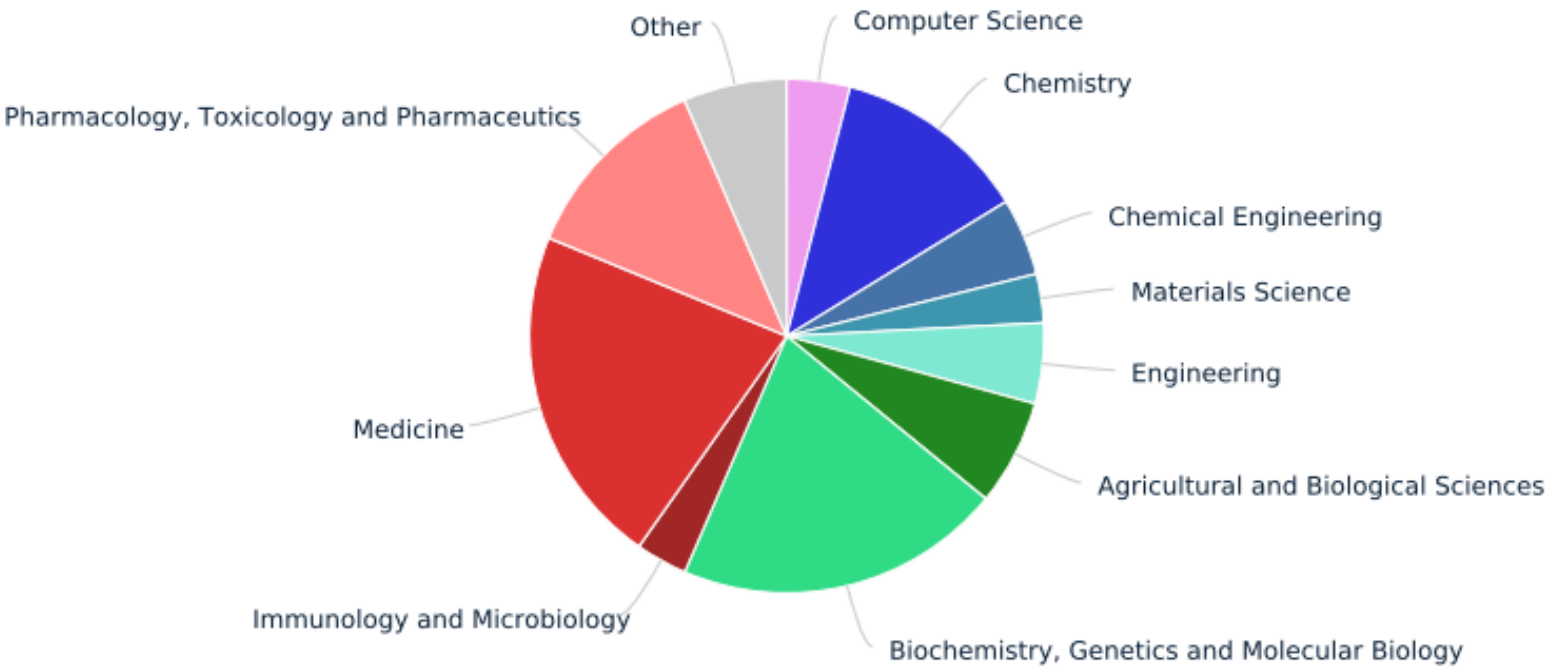
Faculty of Medical Technology, MU

SciVal

Year range: 2011 to 2015

Publications	Citations	Researchers	Field-Weighted Citation Impact	Citations per Publication
248 ▲	2,467	63 ▲	1.18	9.9

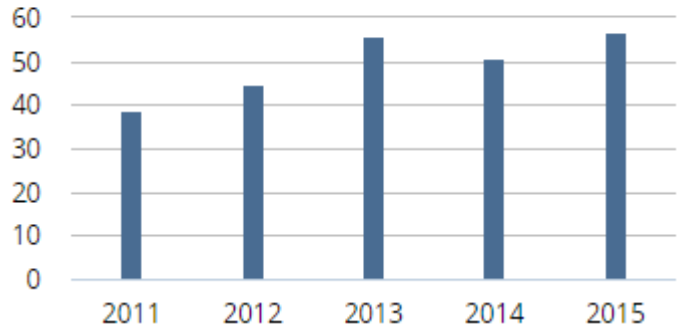
Publications by Subject Area



Overview Module

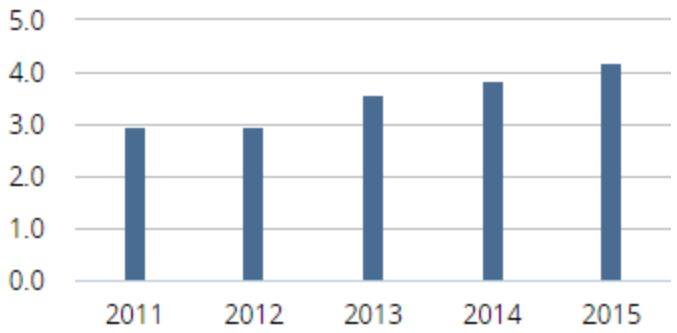
Mahidol– Faculty of Medical Technology

Scholarly Output

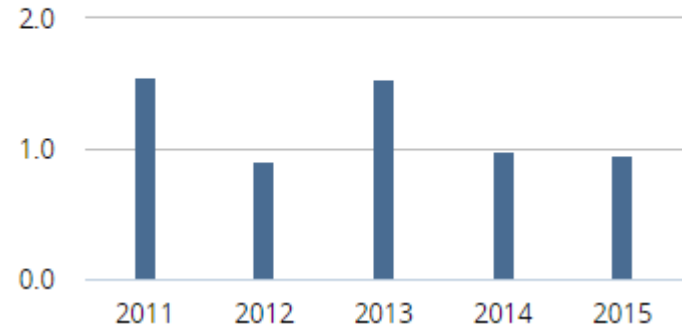


Publications in Top Journal Percentiles

Field-Weighted View Impact



Field-Weighted Citation Impact



3.) Who are Faculty of Medical Technology's top performing Researchers?

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Overview Module

Highest Impact Researchers

Faculty of Medical Technology, MU

View data sources | 2011 to 2015 | no subject area filter selected | ASJC

Summary | Collaboration | Published | Viewed | Cited | Economic Impact | **Researchers**

Researchers

Export | Shortcuts

	Name	Publications	Most recent publication	Field-Weight	*h*-index
1.	Chan-On, Waraporn	8	2015	7.23	6
2.	Kittiniyom, Kanokwan	1	2011	2.79	5
3.	Patmasiriwat, Pimpicha	7	2015	2.47	10
4.	Wonglumsom, Wijit	3	2015	2.18	5
5.	Apilux, Amara	7	2015	2.14	6
6.	Dakeng, Sumana	3	2013	1.70	5
7.	Srungboonmee, Kakanand	4	2015	1.54	2
8.	Nantasenamat, Chanin	52	2015	1.46	20
9.	Tantimongcolwat, Tanawut	3	2015	1.31	9
10.	Promkan, Moltira	4	2013	1.29	5

Overview Module

Each Author has a Profile

Nantasenamat, Chanin

Scopus author ID: 12039071300 | View in Scopus

Publications	Citations	Citations per Publication	*h*-index
82	1,163	14.2	20

View list of publications

Publications by **Institution**

Mahidol University (100.0%)

Publications by **Subject Area**

Drug Discovery (12.3%)
Organic Chemistry (9.4%)
Pharmacology (8.7%)
Other (69.6%)

Publications by **Scopus Source**

European Journal of Medicinal ... (13.4%)
EXCLI Journal (13.4%)
Chemometrics and Intelligent ... (8.5%)
Other (64.6%)

4.) How much do the Departments in Faculty of Medical Technology publish in top quality journals?

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Benchmarking Module

Faculty of Medical Technology Departments ranked by %papers in Top Quality Journals

Entity	Scholarly Output	Publications in Top 10 Journal Percentiles (%)
Center for Innovation Dev&Technol Transfer,MT MU	75	25.8
Dept. of Clinical Microscopy,MT MU	40	20.0
Center of Data Mining&Biomedical Informatics,MT MU	72	17.4
Dept. of Clinical Chemistry,MT MU	29	17.2
Dept. of Clinical Microbiology&Applied Tech,MT MU	120	16.4
Dept. of Parasitology & Community Health,MT MU	8	12.5
Center for Med Technol&Quality Improvement,MT MU	5	0.0

5.) How has Mahidol's research contributed to Innovation?

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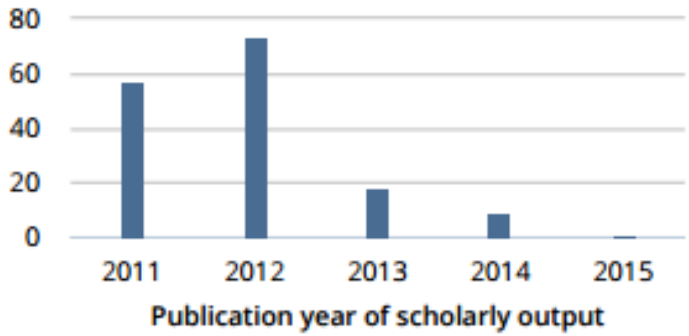
Overview Module

Patent to Article citations for Mahidol

Summary | Awarded Grants | Collaboration | Published | Viewed | Cited | **Economic Impact**

Patent office: All Patent Offices

Citing-Patents Count



149

count of patents citing the scholarly output published by Mahidol University

View list of patents

Learn more about this metric

Patent-Cited Scholarly Output

105

count of scholarly outputs by Mahidol University that have been cited in patents

View list of publications

Learn more about this metric

Overview Module

Patents citing Mahidol scientific papers

Title	Inventors	Applicants/Owners	Publication year of patents	Patent office	Cited Scholarly Outputs
METHODS AND COMPOSITION DISEASE					
View abstract | View in Paten					
Nanofluidic devices for the rap systems and methods of analy					
View abstract | View in Paten					
Flavivirus vaccines					
View abstract | View in Paten					
Methods for evaluating viral re virus entry using recombinant					
View abstract | View in Paten					
COMPOSITIONS AND METHOD RECEPTOR USAGE AND INHIBI VIRUS ASSAYS					
View abstract | View in Paten					
Methods of evaluating viral en protein constructs					
View abstract | View in Paten					
Markers of XMRV infection and					
View abstract | View in Paten					
BORDETELLA PERTUSSIS LOS-D TOXIN GLYCOCONJUGATE AND TREATMENT OF INFECTIONS C					
View abstract | View in Paten					
A MOLECULAR MARKER OF PL					

Bibliographic data: WO2009144551 (A2) — 2009-12-03

In my patents list | EP Register | Report data error | Print

USE OF DRONEDARONE OR A PHARMACEUTICALLY ACCEPTABLE SALT THEREOF, FOR THE PREPARATION OF A MEDICAMENT FOR REGULATING THE POTASSIUM LEVEL IN THE BLOOD

Page bookmark	WO2009144551 (A2) - USE OF DRONEDARONE OR A PHARMACEUTICALLY ACCEPTABLE SALT THEREOF, FOR THE PREPARATION OF A MEDICAMENT FOR REGULATING THE POTASSIUM LEVEL IN THE BLOOD
Inventor(s):	RADZIK DAVIDE [FR]; VAN EICKELS MARTIN [DE] +
Applicant(s):	SANOFI AVENTIS [FR]; RADZIK DAVIDE [FR]; VAN EICKELS MARTIN [DE] +
Classification:	- international: ***A61K31/343; A61P9/04***
	- cooperative: A61K31/343
Application number:	WO2009IB05605 20090416 Global Dossier
Priority number(s):	FR20080003525 20080624 ; US20080045995P 20080418
Also published as:	WO2009144551 (A3) FR2930150 (A1) FR2930150 (B1) → ZA201007391 (B) → UY31768 (A) → more

Abstract of WO2009144551 (A2)

Translate this text into

Select language | patenttranslate powered by EPO and Google

Use of dronedarone or a pharmaceutically acceptable salt thereof, for the preparation of a medicament for use in regulating the potassium level in the blood.

6.) How does Mahidol's publication output compare to other Thai Institutions?

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2011 to 2015 ▾ | no subject area filter selected ▾

Top 15 Institutions in Thailand

	Institution	Publications	Field-Weight ▾
1.	Mahidol University	9,887 ▲	1.10
2.	Chulalongkorn University	9,584 ▲	1.00
3.	Chiang Mai University	5,514 ▲	1.00
4.	Kasetsart University	4,704 ▲	0.78
5.	Khon Kaen University	4,644 ▲	0.93
6.	Prince of Songkla University	4,083 ▲	1.00
7.	King Mongkut's University of Technology Thonburi	3,146 ▼	1.09
8.	National Science and Technology Development Agency Thailand	3,125 ▼	1.02
9.	King Mongkut's Institute of Technology Ladkrabang	2,967 ▲	0.79
10.	Thammasat University	2,866 ▲	0.82
11.	Suranaree University of Technology	1,869 ▲	0.94
12.	Asian Institute of Technology	1,485 ▼	0.87
13.	King Mongkut's University of Technology North Bangkok	1,437 ▲	0.80
14.	Mahasarakham University	1,348 ▼	0.68
15.	Naresuan University	1,263 ▲	0.87

7.) Who are the key collaboration partners of Mahidol?

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Mahidol top collaboration partners

Worldwide ▾ All sectors ▾

2,104 collaborating Institutions 6,078 co-authored publications

	Institution	Co-authored publications	Field-Weighted C...
	Chulalongkorn University	632 ▼	0.97
	University of Oxford	490 ▲	2.84
	National Science and Technology Development Agency Thailand	456 ▲	1.04
	Thailand Ministry of Public Health	353 ▲	2.06
	Chiang Mai University	318 ▲	0.94
	Khon Kaen University	303 ▲	1.15
	Thammasat University	288 ▲	0.97
	Kasetsart University	213 ▲	0.88
	Prince of Songkla University	193 ▲	1.27
	Srinakharinwirot University	163 ▼	0.95
	University College London	144 ▲	4.21
	Harvard University	123 ▲	4.70
	London School of Hygiene and Tropical Medicine	121 ▲	4.02
	Burapha University	116 ▼	0.79
	Armed Forces Research Institute of Medical Sciences, Thailand	114 ▲	4.11

8.) How much does Mahidol collaborate with Industry?

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Mahidol top corporate collaboration partners

Worldwide ▾ Corporate ▾ reset filter

67 collaborating Institutions 196 co-authored publications

Institution	Co-authored publications	Field-Weighted C...
Novartis	30 ▲	3.01
Novartis USA	25 ▲	4.32
GlaxoSmithKline	24	5.79
Merck	19 ▲	8.86
Sanofi-Aventis	15 ▼	15.35
Abbott Laboratories	6	3.01
Novo Nordisk AS	6 ▲	5.18
Pfizer	6 ▲	8.69
Agilent Technologies	5	0.70
Genentech Incorporated	5 ▲	13.85
New York Blood Center	4 ▲	18.67
AstraZeneca	3 ▲	16.26
Boehringer Ingelheim GmbH	3	5.33
Bristol-Myers Squibb	3 ▼	4.41
Dow Chemical	3 ▼	1.56

8.) How well does Mahidol perform in "Dengue Vaccine" research?

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Mahidol in *Dengue Vaccine* Research

dengue AND vaccine

View data sources | 2011 to 2015 | no subject area filter selected | ASJC

Summary | Published | Viewed | Cited | Economic Impact | Authors | Institutions

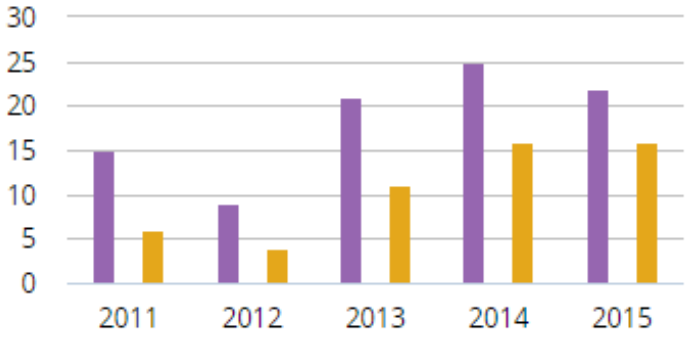
Research performance

Mahidol University has **53** publications in this Research Area

Publications	Citations	Authors	Field-Weighted Citation Impact
53 ▲	1,185	66 ▲	4.35

View list of publications

Scholarly Output



	Publications
Worldwide	1,134
Asia Pacific	514
Thailand	92
Mahidol University	53

9.) Who are the top performing institutions and researchers Dengue Vaccine research in the World?

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Top Dengue Vaccine Research Institutes in the World

dengue AND vaccine

View data sources | 2011 to 2015 | no subject area filter selected | ASJC

Summary | Published | Viewed | Cited | Economic Impact | Authors | **Institutions**

Most active Institutions in this Research Area

Export | Shortcuts

Show top 10 contributing Institutions (worldwide) in this Research Area, by number of publications

	Institution	Publications	Field-Weight
1.	**Mahidol University**	53 ▲	4.35
2.	National University of Singapore	47 ▲	4.54
3.	Centers for Disease Control and Prevention	46 ▼	2.38
4.	National Institutes of Health	41 ▲	2.41
5.	Sanofi-Aventis	40 ▲	8.85
6.	Johns Hopkins University	40 ▲	3.02
7.	University of Oxford	34 ▲	5.58
8.	Walter Reed Army Institute of Research	32 ▲	2.50
9.	Armed Forces Research Institute of Medical Sciences, Thailand	30	4.35
10.	Fundacao Oswaldo Cruz	30 ▲	1.37

Research Metrics

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Metrics

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

Societal Impact metrics
- Mass Media Mentions
- Media Exposure
- Field-Weighted Mass Media

Input metrics
- Awarded Grants

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

Disciplinarity metrics
- Journal count
- Journal category count

Views metrics
- Views
- Views per publication
- Field-Weighed Views Impact

Economic Impact metrics
- Citing Patents
- Patent-Cited Scholarly Output
- Patent-Citations Count
- Patent-Citations per Scholarly Output

Journal Metrics
- CiteScore
- SJR
- SNIP

Non-Performance Variables

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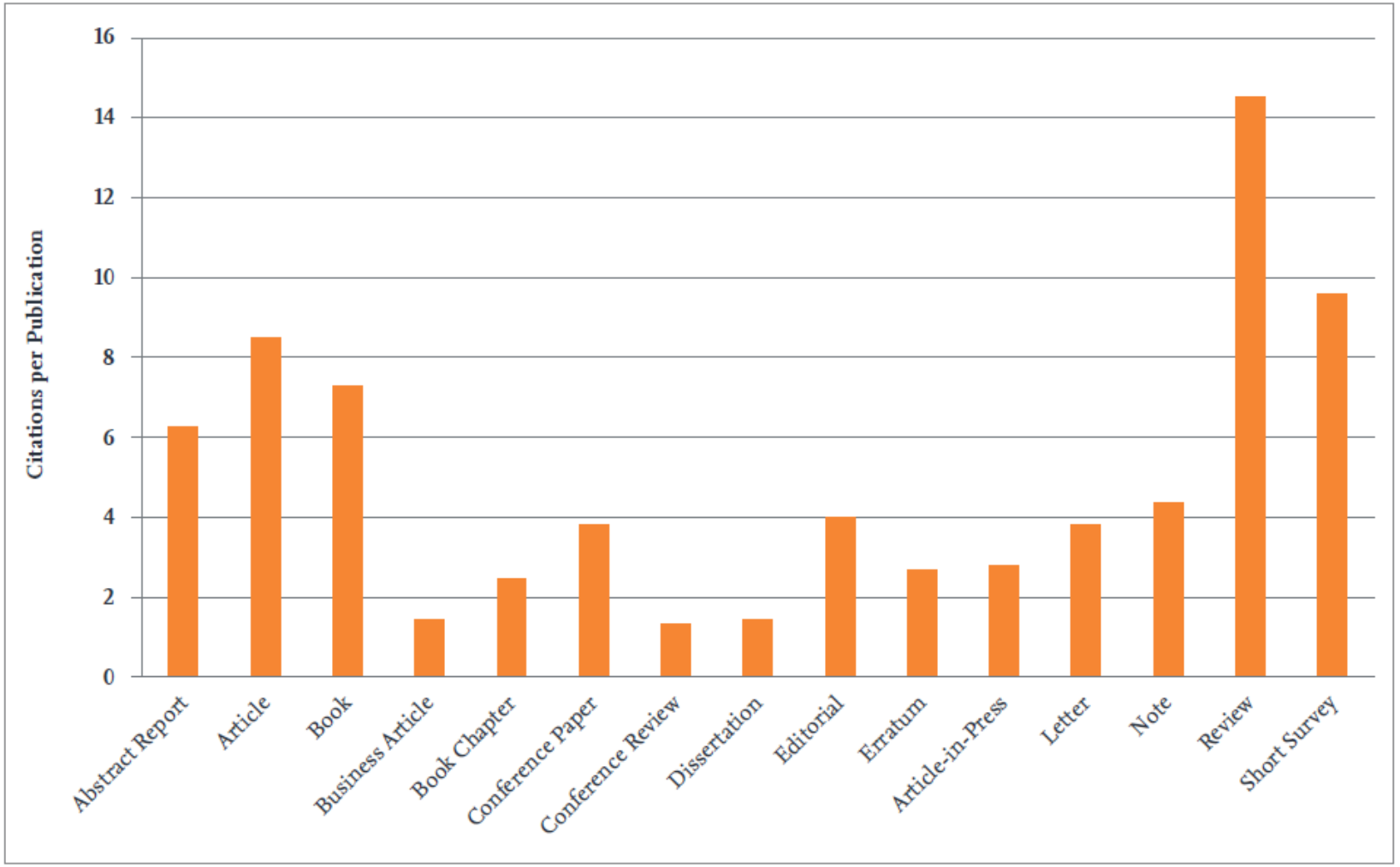
When making comparisons, we must take into consideration "Non-performance variables"

- Size
- Discipline
- Publication-type
- Database coverage
- Manipulation
- Time

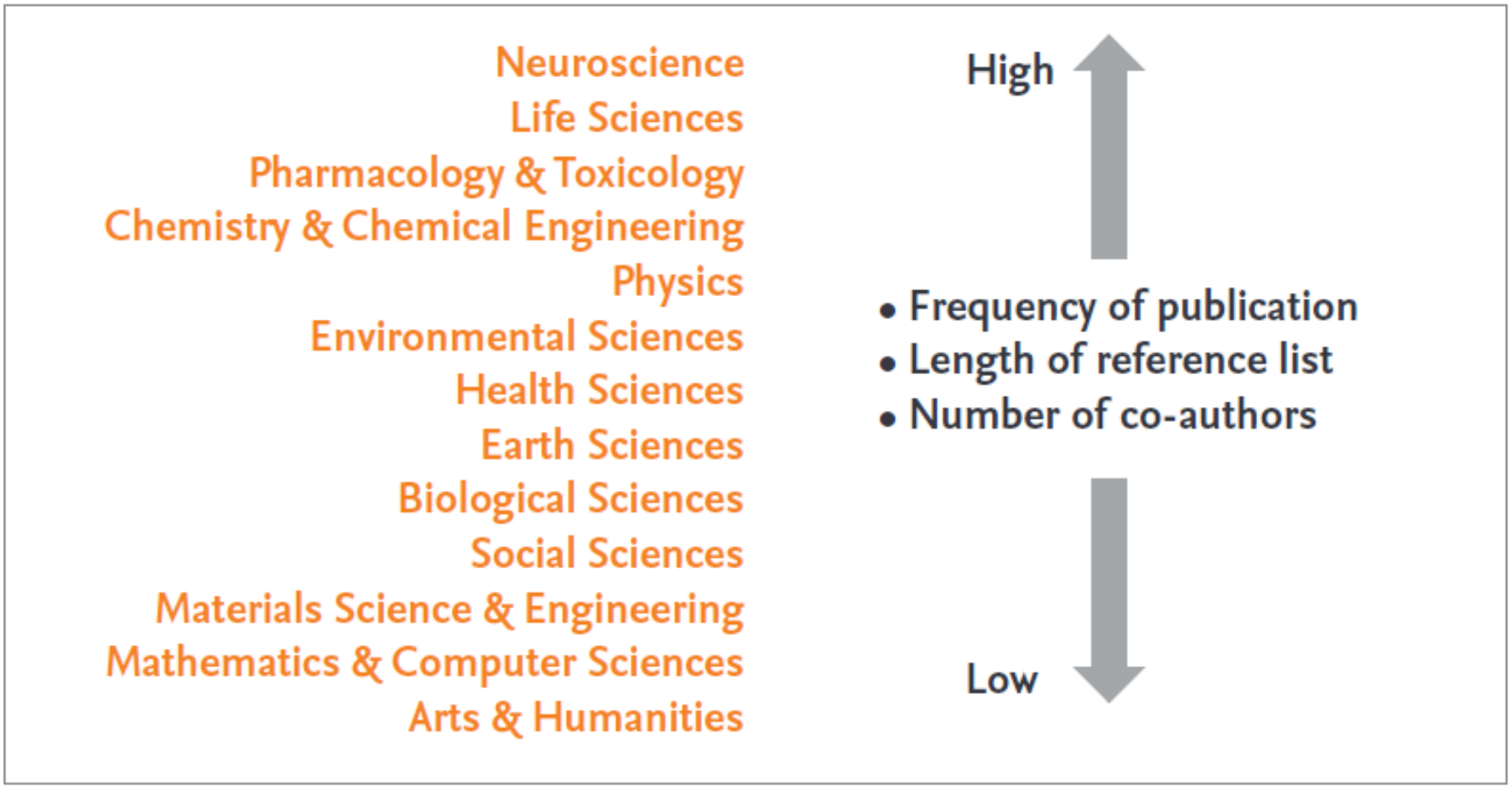
In some cases the difference in a metric value between two entities (authors for example) might not reflect a difference in performance. Instead the difference can be caused by non-performance variables.

Publications types receive differing levels of citations



Because some publication types are cited more often than others, we should not compare different types without applying normalization.

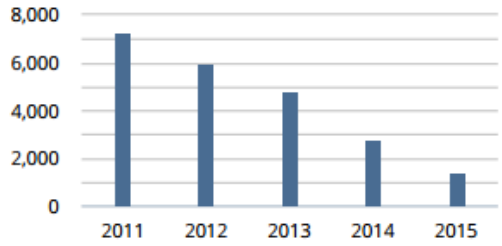
Citation practices differ between disciplines



Because some subject areas are cited more often than others, we should not compare papers from different fields without applying normalization.

Size and Time

Citation Count



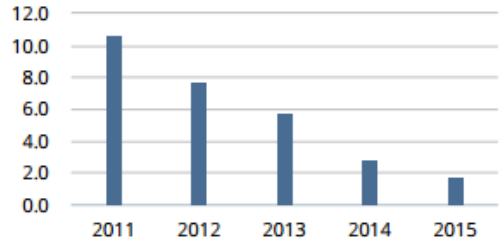
22,233

number of citations received by publications at Prince of Songkla University

Citation count is directly related to volume

Do you think the declining trend is indicative of a decrease in quality or is it caused by a non-performance variable?

Citations per Publication

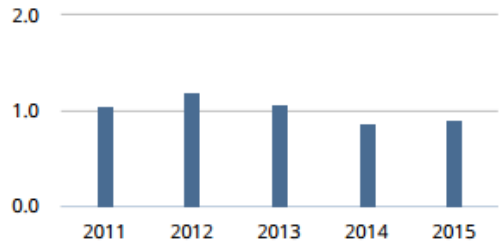


5.4

average number of citations per publication at Prince of Songkla University

CPP normalizes for differences in publication volume

Field-Weighted Citation Impact



1.00

Field-Weighted Citation Impact of Prince of Songkla University

FWCI normalizes for subject area, document type, and time

Please don’t be shy…

CiteScore

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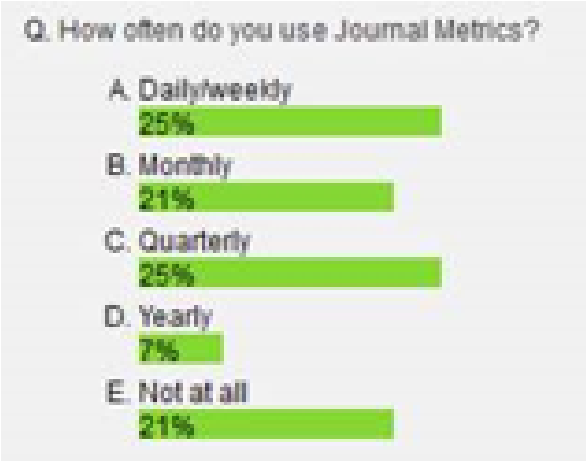
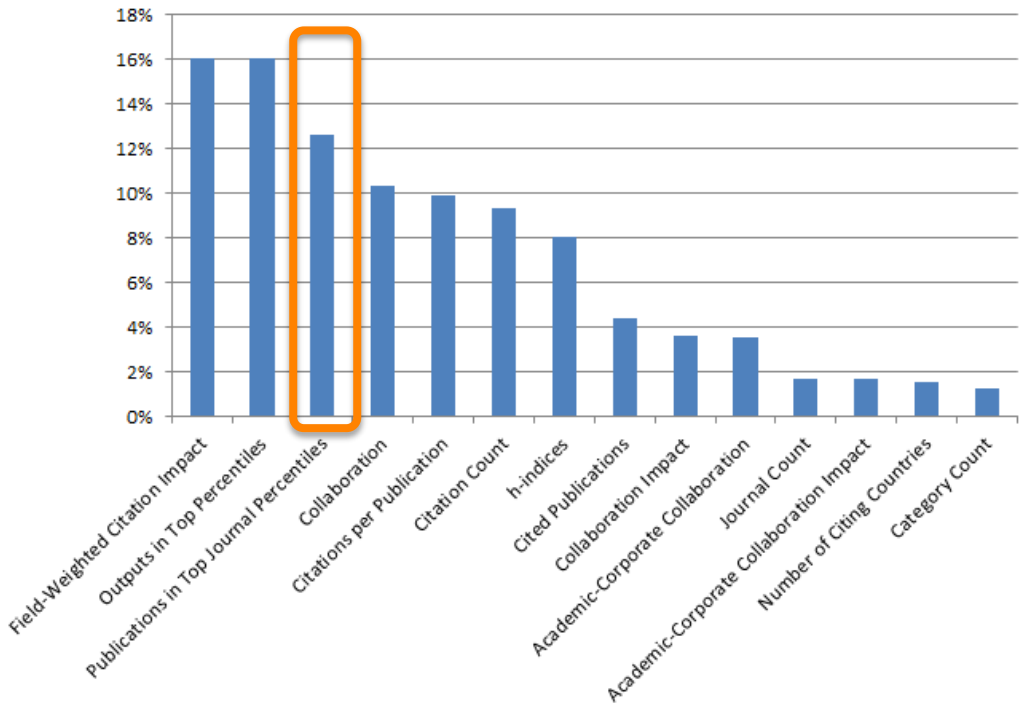
Serial title metrics are important!

- Serial title metrics are still important complements to new and alternative metrics

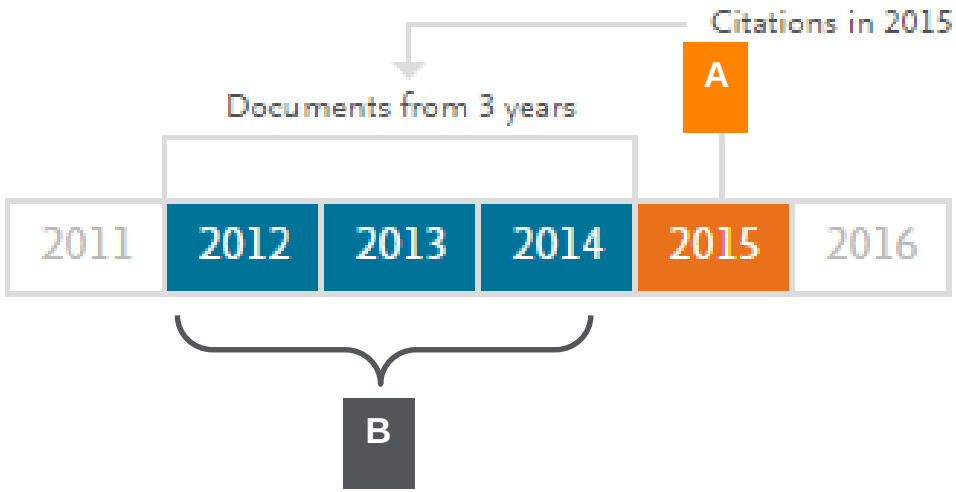




- Many serial titles are missing transparent and replicable metrics that are easy to access
- SNIP & SJR are complex and difficult to replicate
- We have introduced CiteScore to compliment them

CiteScore is a simple metric for all Scopus serial titles

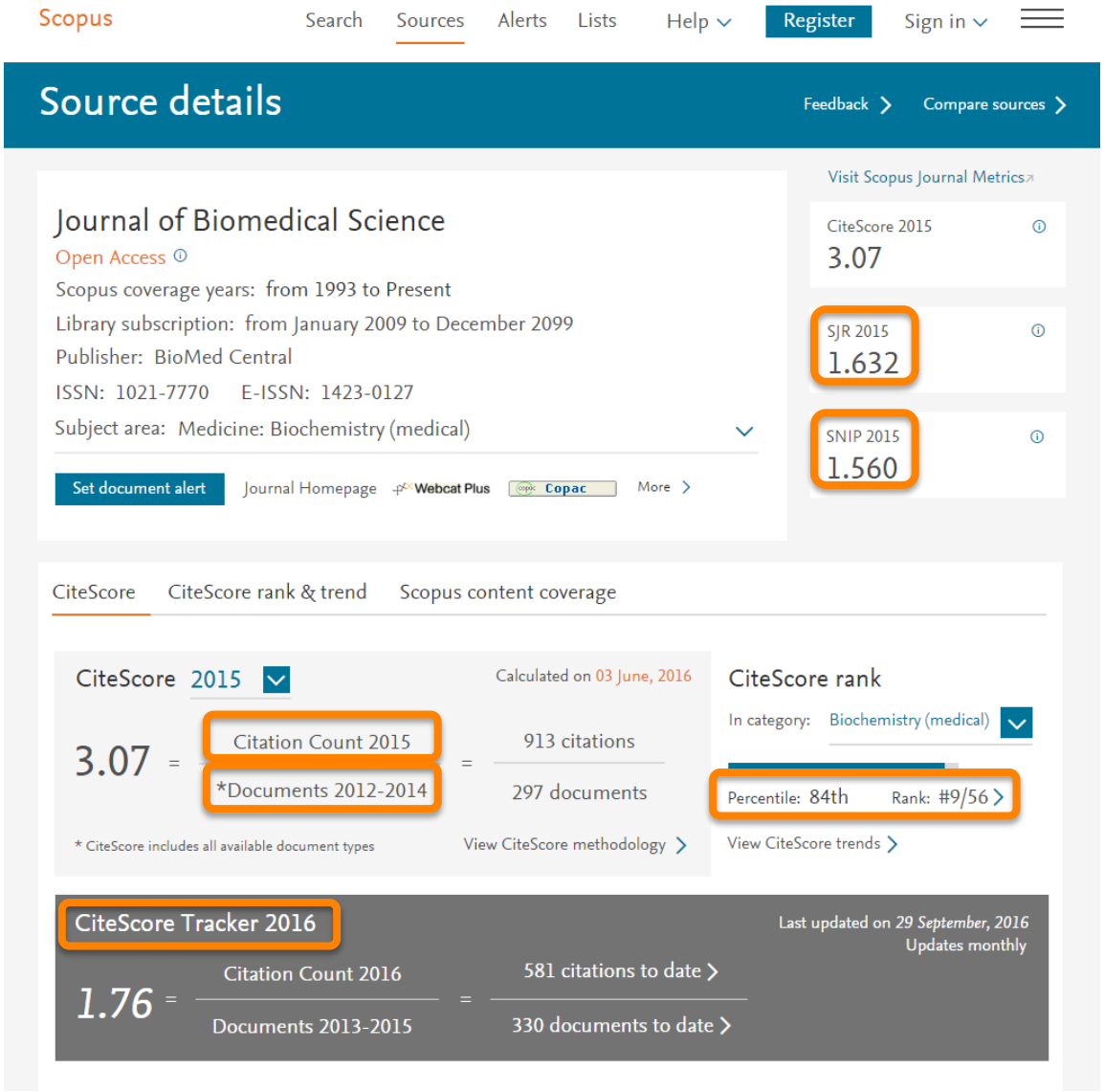
CiteScore 2015 value = $\frac{A}{B}$



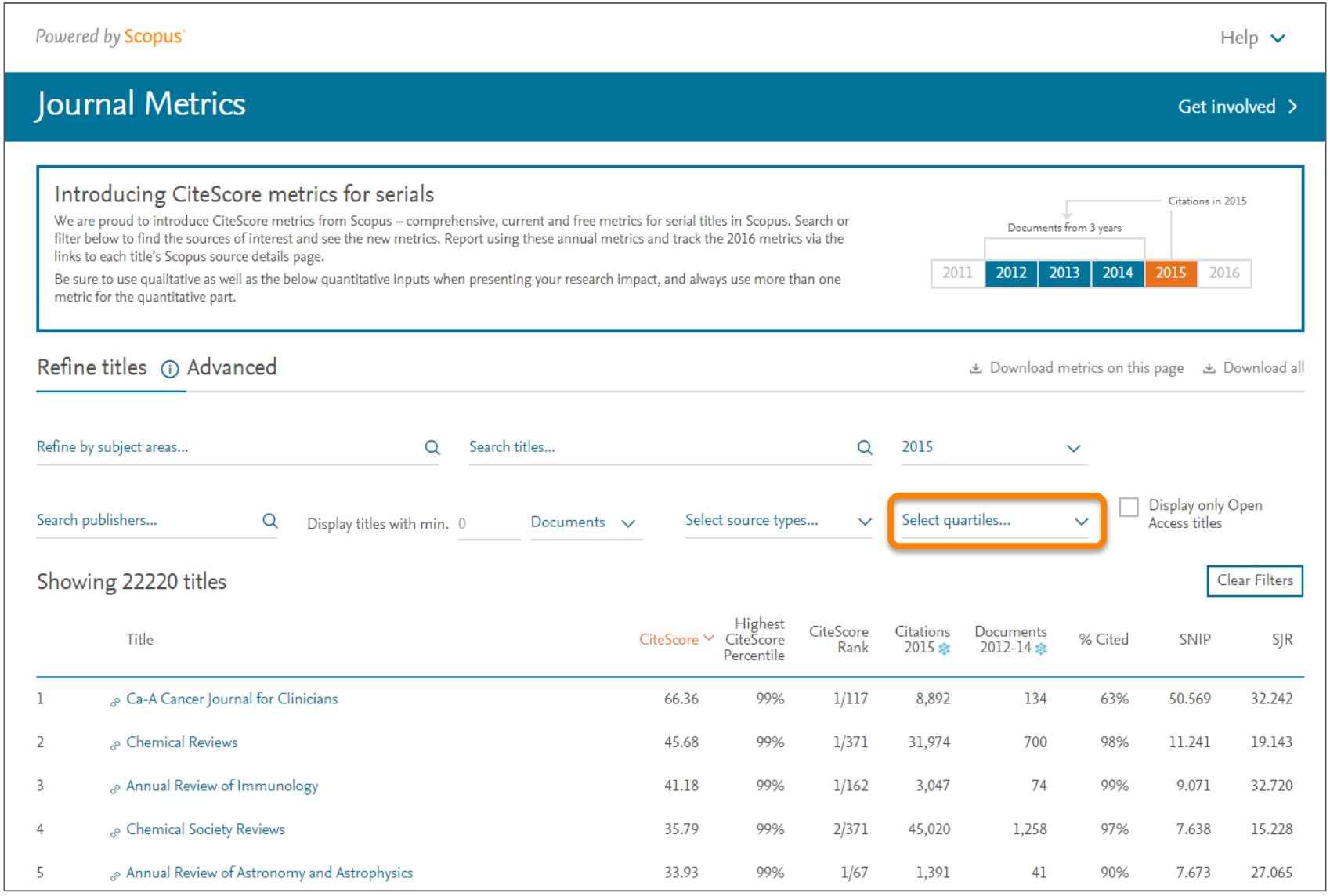
CiteScore	Impact Factor
A = citations to 3 years of documents	A = citations to 2 or 5 years of documents
B = all documents indexed in Scopus, same as A	B = only citable items (articles and reviews), different from A

Note: at launch, all serial titles in the May 2016 title list, and with some documents indexed in 2016, will have CiteScore metrics

CiteScore is one of a family of related metrics, available for FREE.



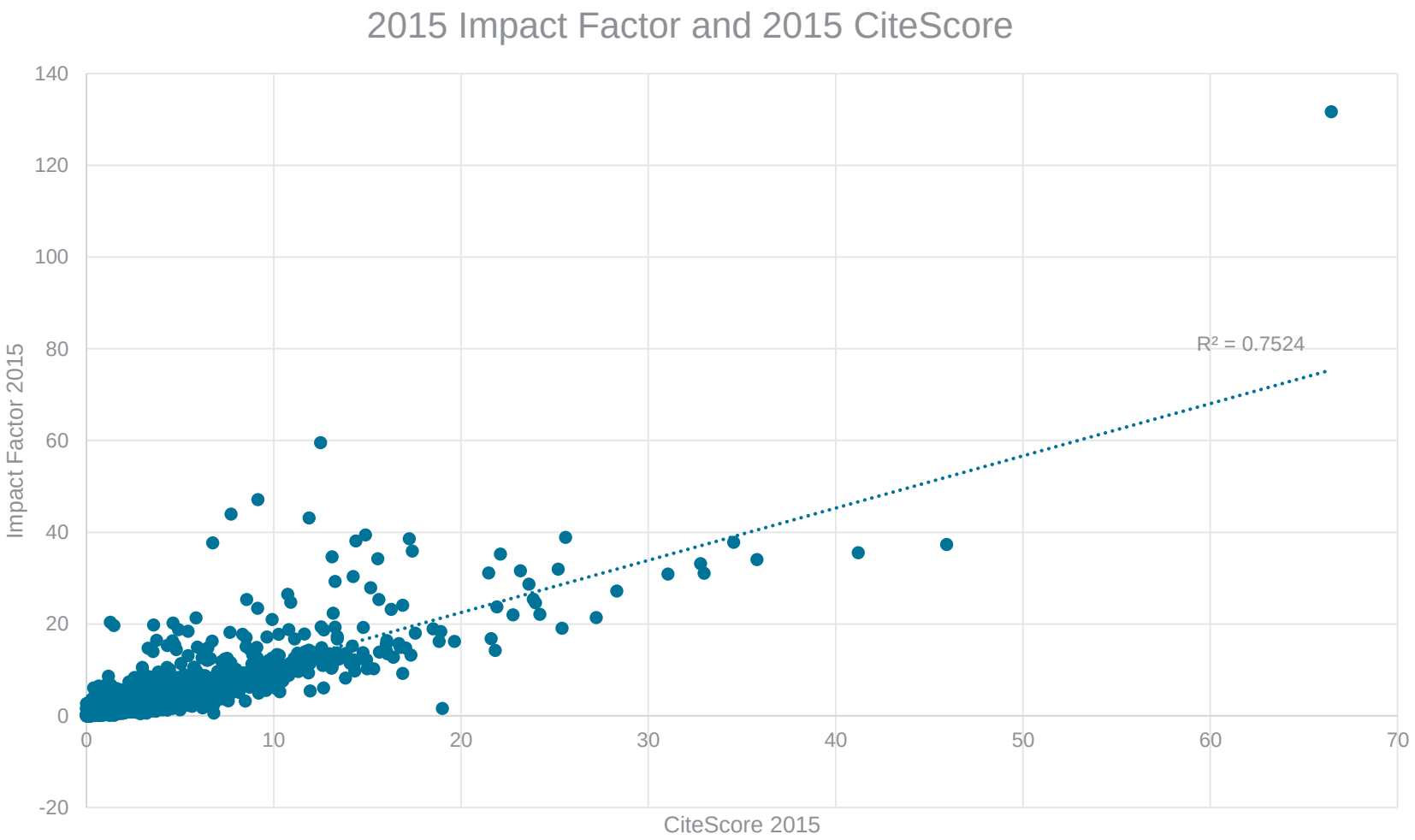
Journalmetrics.scopus.com website
Static values 2011-2015 for reporting, showcasing and exporting



	Title	CiteScore	Highest CiteScore Percentile	CiteScore Rank	Citations 2015	Documents 2012-14	% Cited	SNIP	SJR
1	Ca-A Cancer Journal for Clinicians	66.36	99%	1/117	8,892	134	63%	50.569	32.242
2	Chemical Reviews	45.68	99%	1/371	31,974	700	98%	11.241	19.143
3	Annual Review of Immunology	41.18	99%	1/162	3,047	74	99%	9.071	32.720
4	Chemical Society Reviews	35.79	99%	2/371	45,020	1,258	97%	7.638	15.228
5	Annual Review of Astronomy and Astrophysics	33.93	99%	1/67	1,391	41	90%	7.673	27.065


10min
Demo

CiteScore 2015 correlates 75% with Impact Factor



Main advantages of CiteScore

Comprehensive

- **Based on Scopus**, the world's broadest database
- A CiteScore will be available **for all serials, not just journals**
- CiteScore can be **calculated for portfolios**

Transparent

- CiteScore and associated metrics will be available for **free**
- CiteScore is **easy to calculate for yourself**
- The **underlying database is available for you to interrogate**

Current

- CiteScore Tracker is **updated monthly**
- **New serial titles** will have CiteScore metrics the year after they are indexed in Scopus

SNIP

Journal Metrics

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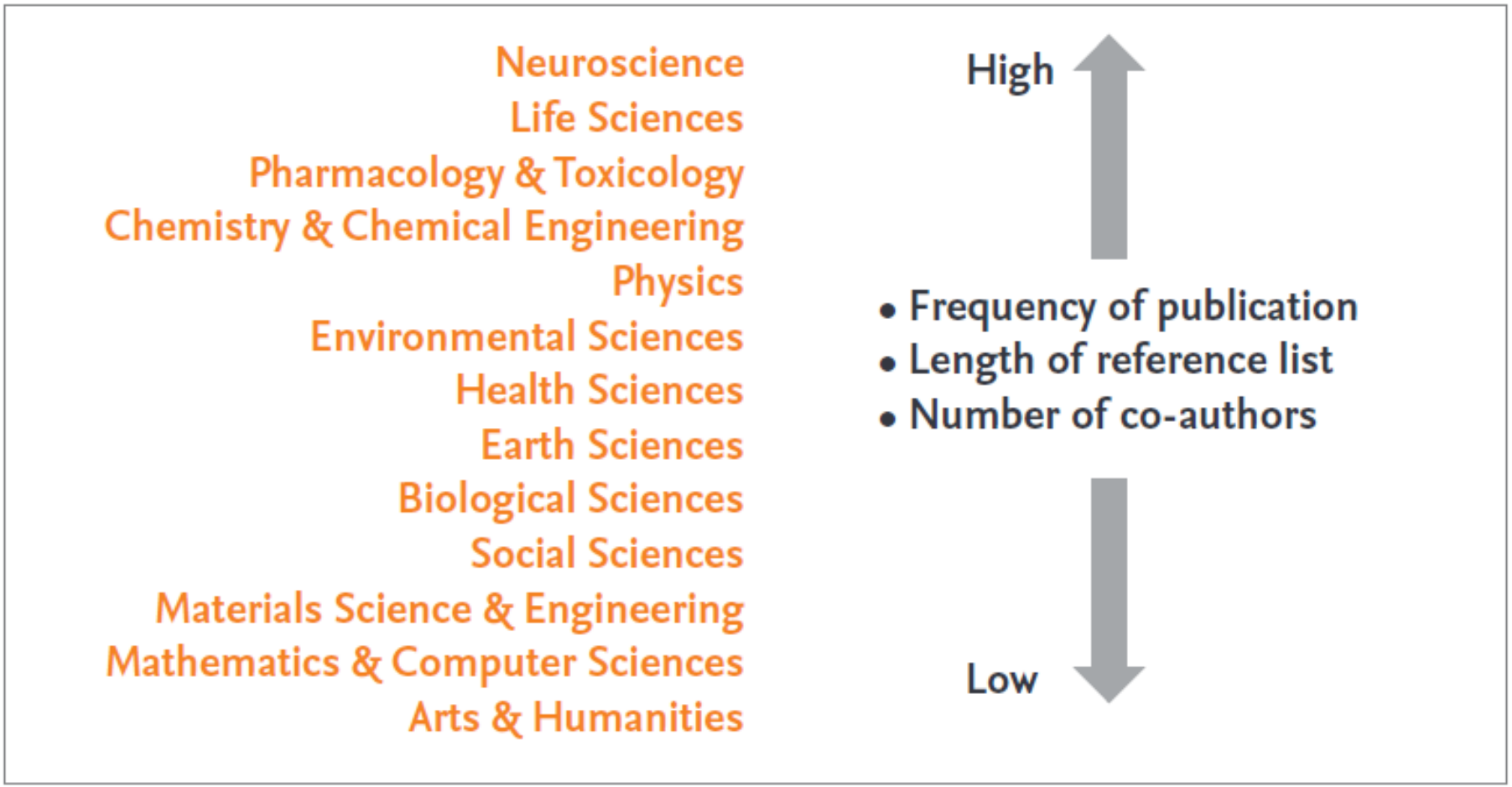
Citation practices differ between disciplines



Because some subject areas are cited more often than others, we should not compare journals from different fields without applying normalization.

SNIP: Source-normalized impact per paper

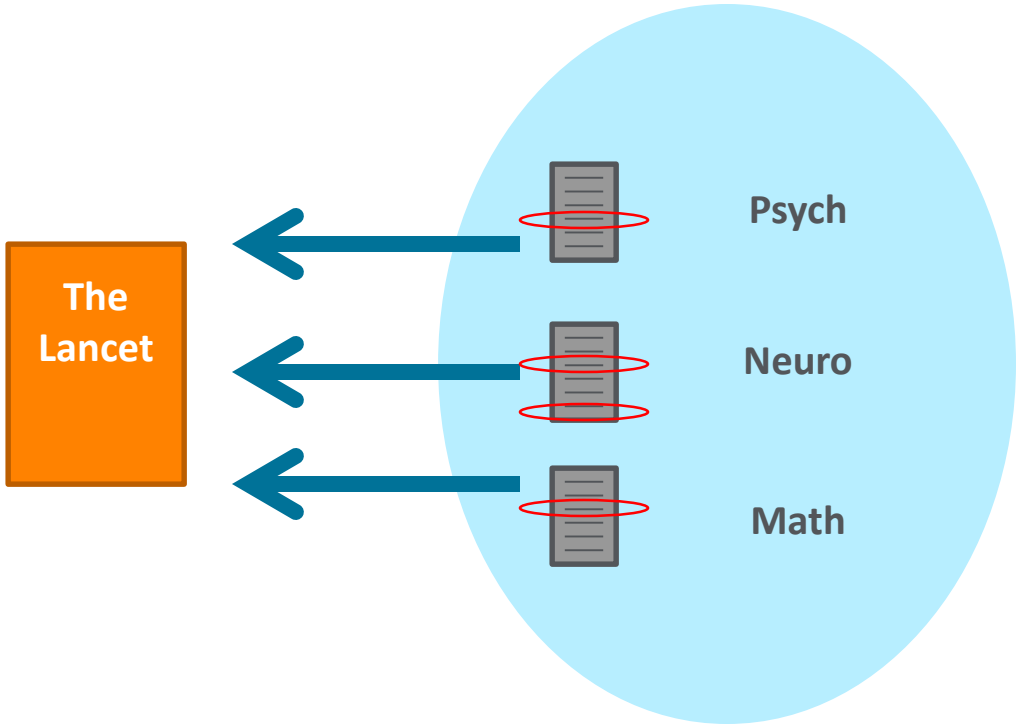
Universiteit Leiden

All **20K** journals have **a Source-normalized impact per paper** (SNIP) measuring contextual citation impact by weighting citations per subject field

- Peer-reviewed papers only
- Three year citation window
- Field's frequency and immediacy of citation
- Database coverage
- Journal's scope and focus
- Measured relative to database median

Journal	IPP	Cit. Pot.	SNIP (RIP/Cit. Pot.)
Inventiones Mathematicae	1.5	0.4	**3.8**
Molecular Cell	13.0	3.2	**4.0**

What is the "Subject Area"?



Collection of articles citing the Lancet

ELSEVIER

SJR

Journal Metric

SCIMAGO research group

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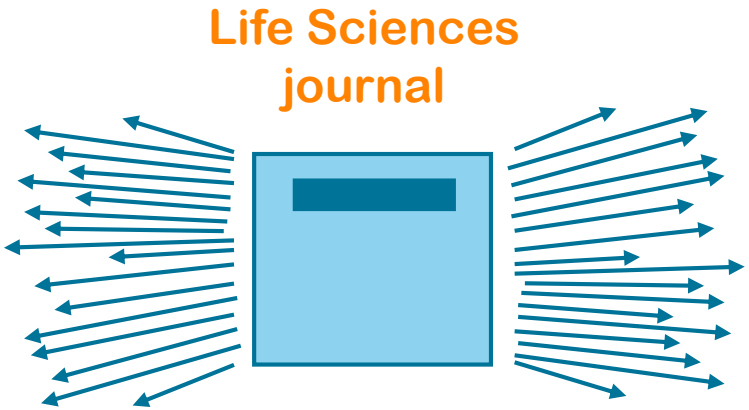
SJR: SCImago Journal Rank

All **20K** journals have a **SCImago Journal Rank** (SJR) a prestige metric based on the idea that not all citations are equal

- SJR is a variant of the eigenvector centrality measure used in network theory and is inspired by the PageRank algorithm used in Google.

- Prestige transferred when a journal cites
  - Citations are weighted depending on where they come from
  - journal's prestige is shared equally between its citations



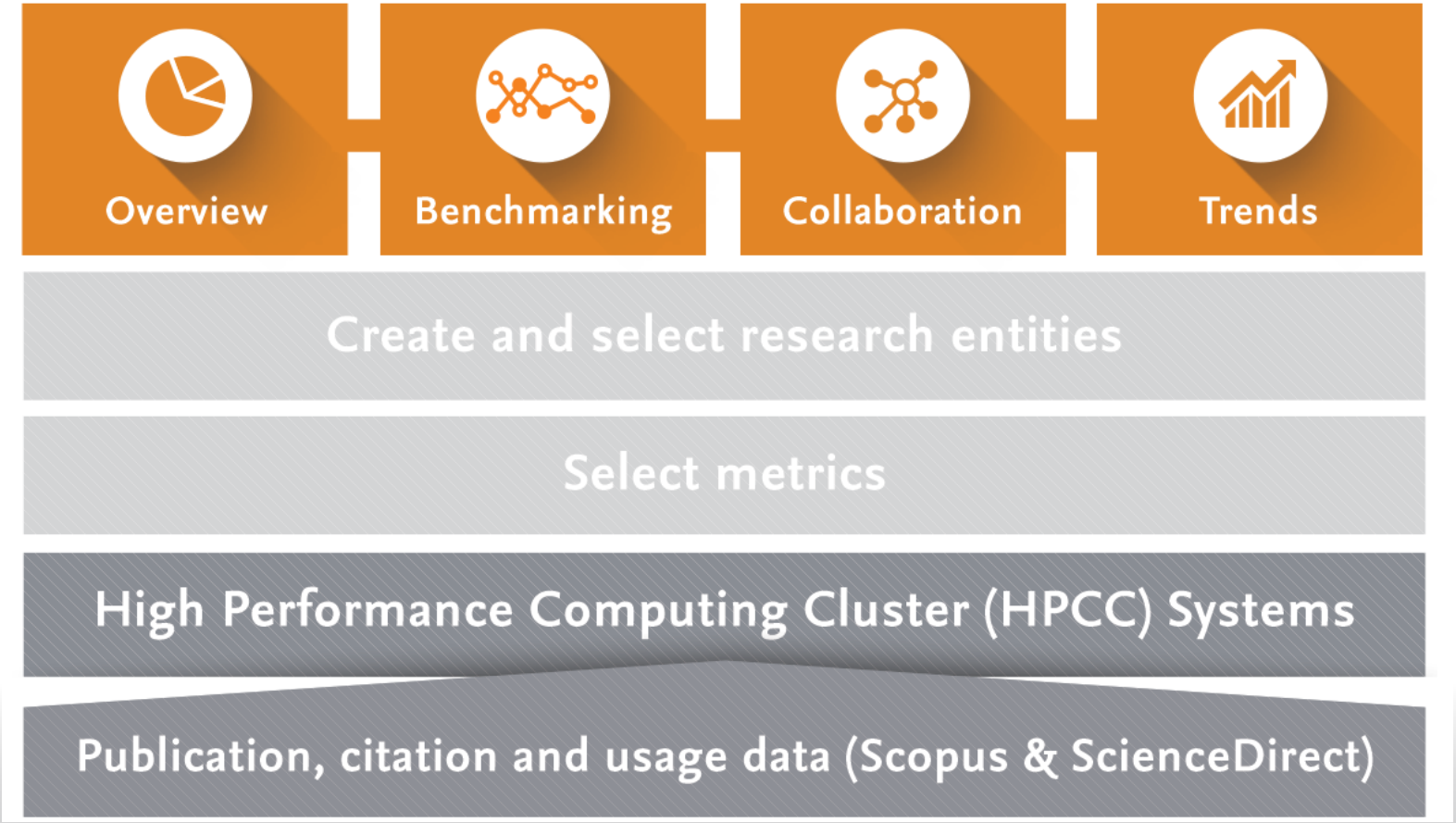
SJR normalizes for differences in citation behaviour between subject fields

Part II
Hands on SciVal Training

Empowering Knowledge

SciVal is Elsevier's Research Intelligence Tool.

SciVal offers quick, easy access to the research performance of 220 nations and 7500 research institutions worldwide (including 774 corporate organizations)



Data updated weekly from Scopus

Accessing SciVal

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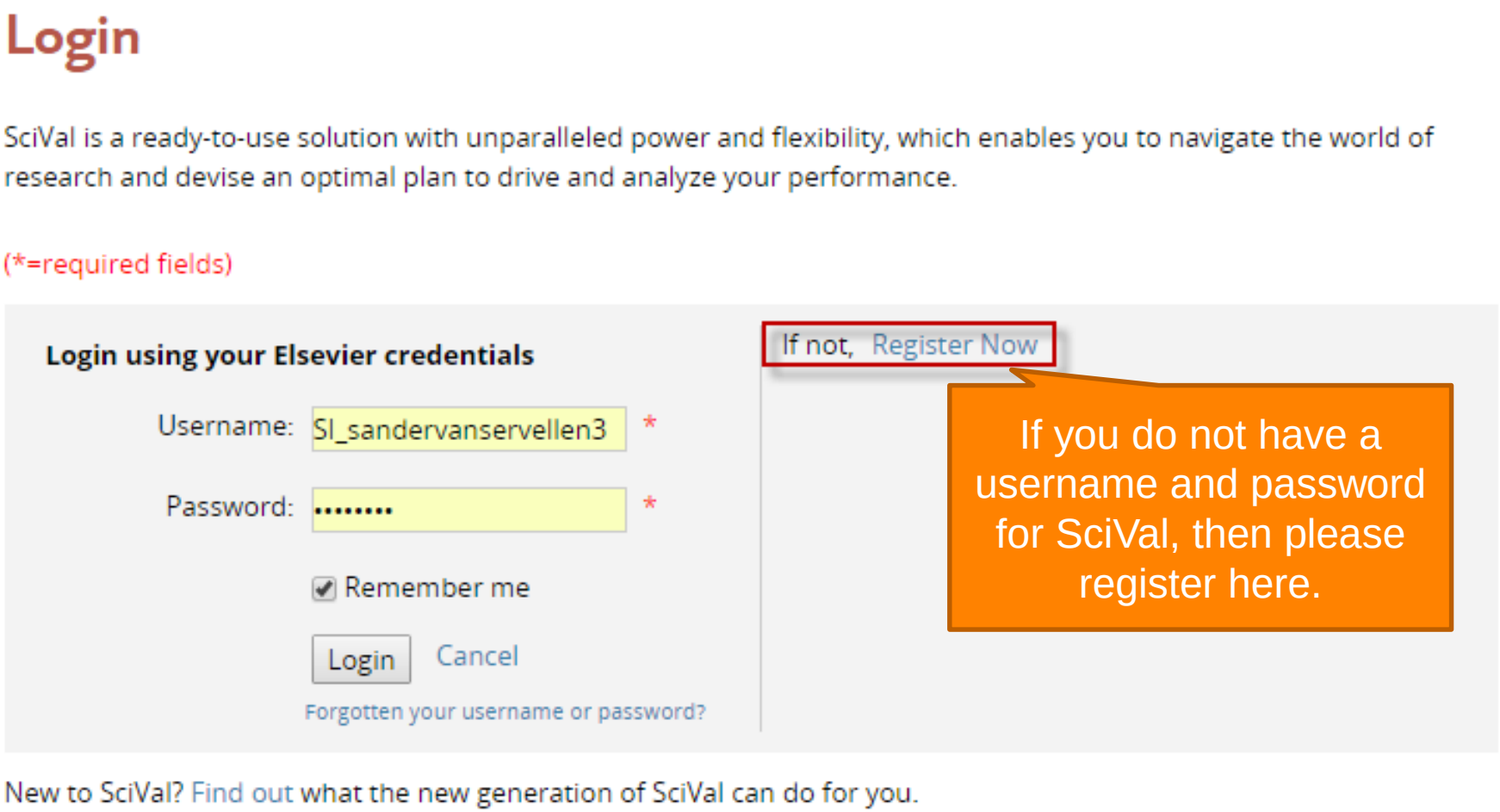
Accessing SciVal: go to www.scival.com

Who does not have access to SciVal? Please raise your hand.



Quick Overview of SciVal

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SciVal Modules

Overview module provides dashboard style reports based on a 3 or 5 year period. You can analyze countries, institutions, any researcher, group of researchers and research areas you have created. It gives a comprehensive overview of one entity at a time.

Benchmarking module is flexible, it allows you to select a time period anywhere from 1996 to one month ago. You can choose from over 17 metrics, and compare across different types of entities (i.e. you directly can compare researchers with departments, institutions, countries in one analysis)

Collaboration module looks at specifically at co-publication trends. It allows you to identify the top collaboration partners of an institution or country, as well as identify potential collaboration partners. Research areas can be applied here as a subject filter.


10min
Demo

Assignments ☺

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Assignment 1

1.) What data is SciVal based on?
- a.) Custom dataset
- b.) Web of Science
- c.) Scopus

2.) How many papers did Mahidol produce in Medicine in 2011?
- a.) 6232
- b.) 1030
- c.) 1375

3.) Who produced the most papers in “Energy” research in 2015:
- a.) Khon Kaen University
- b.) Mahidol
- c.) The both produced the same number of papers in Energy

4.) How many citations did Mahidol receive in “Oncology” (2011-2015)?
- a.) 32% more than world average
- b.) 5% less than world average
- c.) same as world average

5.) Which GOVERNMENT institution did Mahidol co-author with most often (2011-2015)?
- a.) Armed Forced Research Institute of Medical Sciences, Thailand
- b.) National Cancer Institute, Thailand
- c.) Thailand Ministry of Public Health

Answers 1

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Assignment 2

1.) What ***percentage*** of Mahidol papers were published in the ***TOP 10% best journals*** based on ***CiteScore*** journal metric (2011-2015)?

a.) 17.8%
b.) 23.9.%
c.) 2177

2.) How many research ***articles*** did Mahidol produce in Environmental Science in 2013?

a.) 39
b.) 43
c.) 222

3.) What ***percentage*** of Mahidol papers published in ***2011 in Medicine*** are cited often enough to belong to the top 1% highest cited papers world-wide, ***excluding self-citations***?

a.) 1.5%
b.) 1.7%
c.) 1.1%

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Assignment 3

1.) Your boss is interested in research about the “Zika” virus. She asks you to identify the top 3 researchers who publish most papers related to “Zika” between 2011-2015. Create a Research Area in SciVal, using the key-word ”Zika”. Which of the following authors are ***world*** top 3 in terms of output volume?

a.)

Name	Publications	Most recent publication	Field-Weight	*h*-index
Musso, Didier	12	2015	45.82	18
Cao-Lormeau, Van Mai Ai	11	2015	44.76	15
Sall, Amadou Alpha Lpha	7	2015	23.14	32

b.)

Name	Publications	Most recent publication	Field-Weight	*h*-index
Musso, Didier	12	2015	45.82	18
Cao-Lormeau, Van Mai Ai	11	2015	44.76	15
Nhan, Tuxuan	5	2015	31.55	7

c.)

Name	Publications	Most recent publication	Field-Weight	*h*-index
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Thomas, Stephen J.	23	2015	3.42	24
Harris, Eva H.	22	2015	5.12	51

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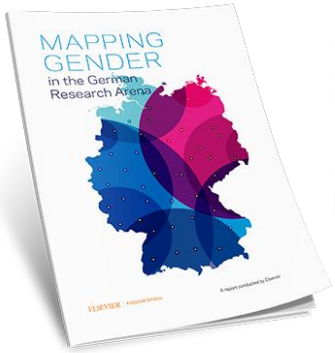


Research Intelligence

Thanks for your attention

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www.elsevier.com/research-intelligence