



# SciVal Spotlight

## Enabling Strategic Decision Making

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The 6<sup>th</sup> Library Connect Seminar South Africa

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# Topics

- Why Spotlight?
- Some context:
  - Data Source
  - Subject Classification
  - Bibliometric theory applied
  - Terminology
- Evidence Based Design
- Spotlight up close
- To Summarise

## The New Reality...



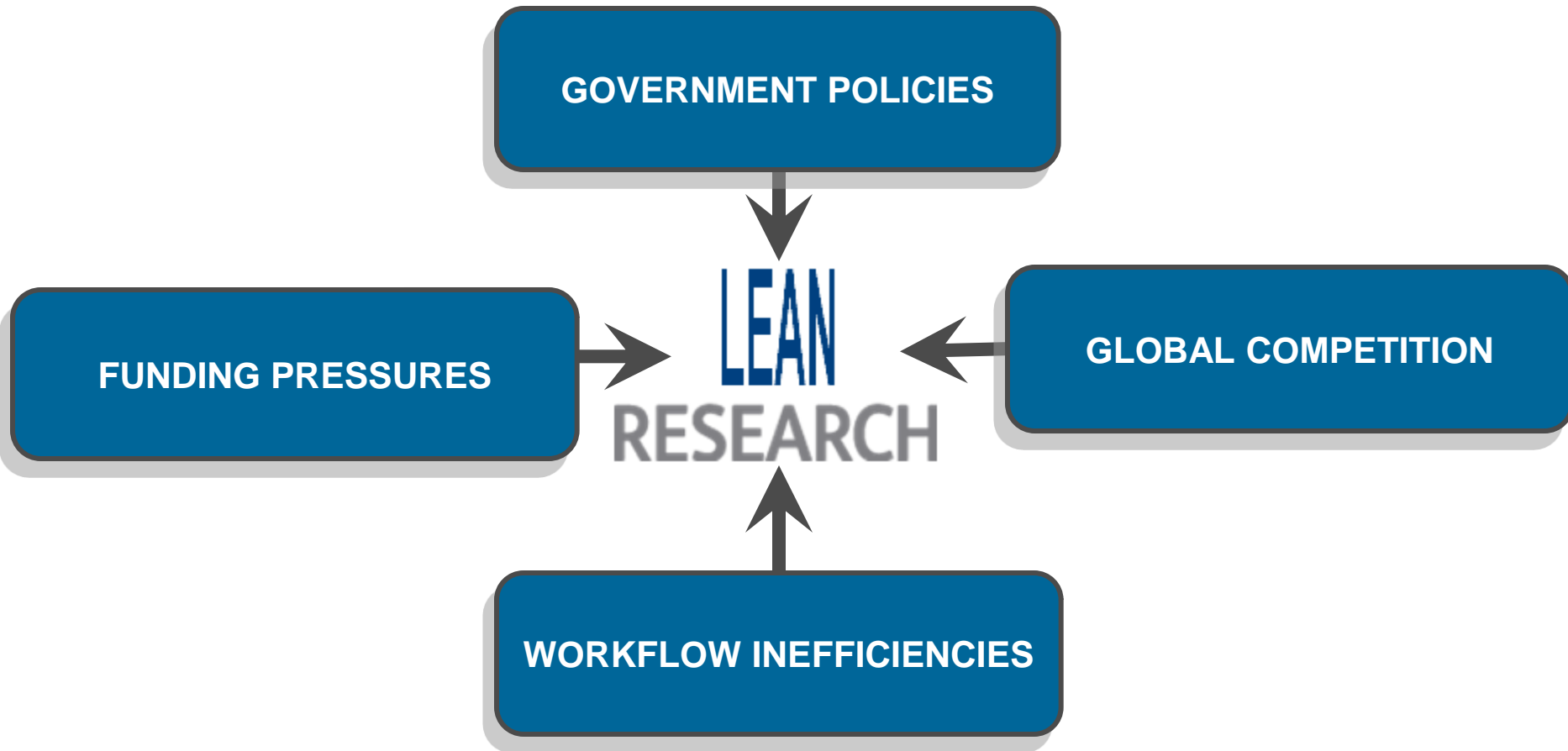
LEAN TIMES = LEAN RESEARCH

“More data will be needed for evaluation/decision making locally to better manage in the economic climate and in response [to] assessment requirements at the national level.”

– Association of Research Libraries  
February, 2009



# Several Forces Are Driving The Need For Lean Research



Trend Intensified by Economic Downturn

# Government Policies on Research



## Research Program

## Sponsor

## Description



- Assess the quality of research in universities and colleges in the UK
- Enable funding bodies to determine how to allocate grants across research projects



**Australian Government**  
**Australian Research Council**

- Detail by institution and by discipline those areas that are internationally competitive, together with emerging areas
- Funding research that leads to breakthrough discoveries and new knowledge
- Providing incentives for universities to partner with other organizations
- Attracting, retaining and developing highly skilled research personnel.



- Identify thematic domains for future European support
- Part of EU's strategy to become "the most dynamic competitive knowledge-based economy in the world"

Governments are actively guiding their national research agenda

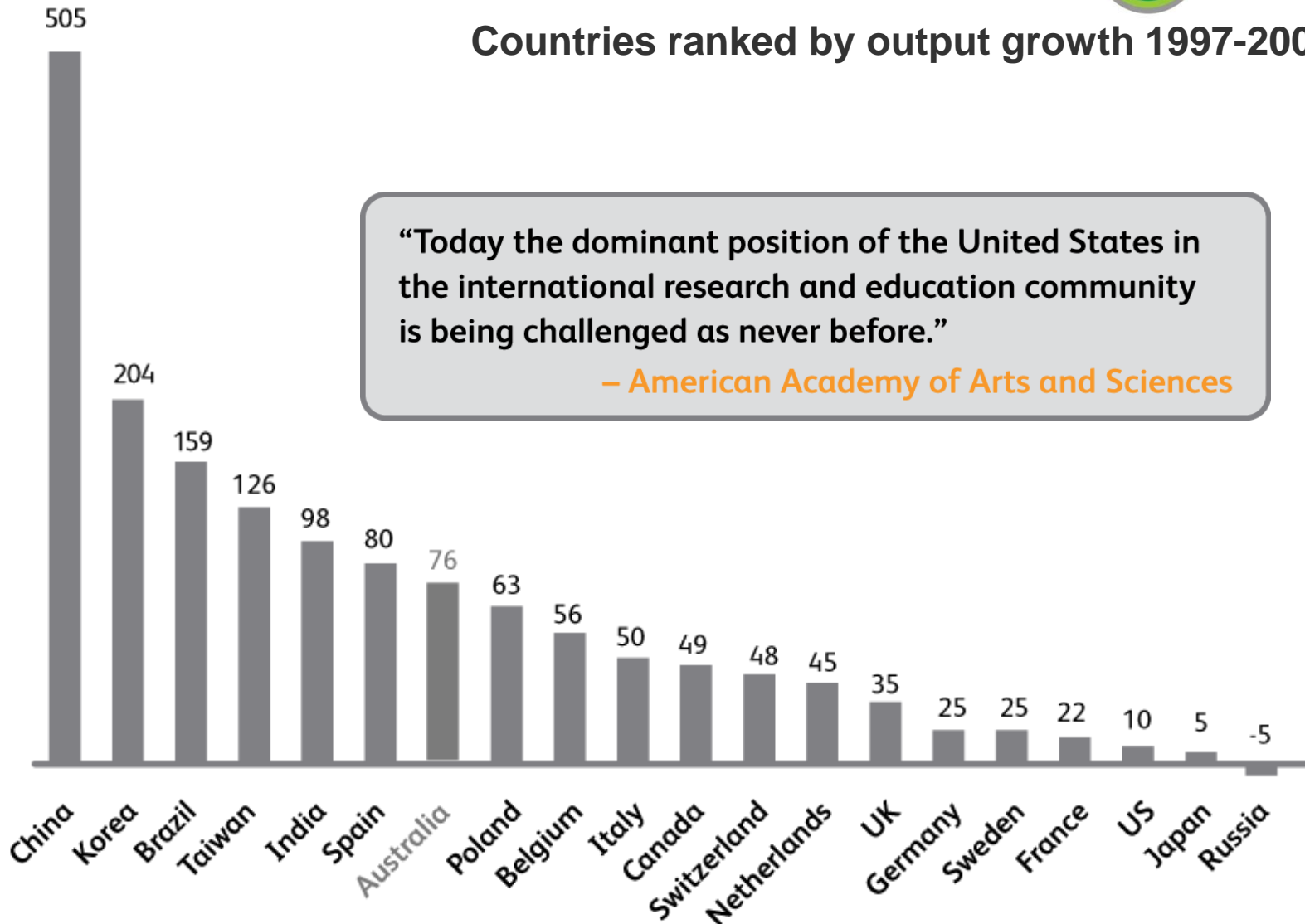
# Global Research Landscape is Changing

GLOBAL COMPETITION

SciVal

SPOTLIGHT

## Countries ranked by output growth 1997-2007



“Today the dominant position of the United States in the international research and education community is being challenged as never before.”

– American Academy of Arts and Sciences

# Research Responds to Globalization

GLOBAL COMPETITION

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SPOTLIGHT

## Research now...

- Crosses national boundaries
- Exhibits high mobility of resources, people, ideas, technologies and infrastructure
- Responds and reacts to public and private pressures
- Networks energetically in real and virtual space/time
- Balances on the knife edge of Competition and Collaboration



# Research is more exciting, but also more challenging

WORKFLOW  
INEFFICIENCIES

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A: SPOTLIGHT

6.5

5.8

**Q:** How many hours per week searching and gathering information?

**Q:** How many hours per week organizing, analyzing and applying information

**Researchers spend more time looking for information than analyzing and applying it**

**“Research into faculty behavior and work practices is sorely needed to inform policy and service development.”**

**– Association of Research Libraries  
February, 2009**

LIBRARY



# Responding to this changing landscape, Elsevier has developed...

- **SciVal Spotlight**, a customized web-based tool that enables your institution to evaluate its research performance and adjust strategies



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# Underlying Data Source



## SCOPUS

- Worlds largest A&I database
- 16000 Journals
- Arts & Humanities now included
- Affiliation Profiles merged manually by the Spotlight team
- 5 year rolling window (2004 to 2008 = 2008 map)

# Scopus data empowering research evaluation



GOVERNMENT POLICIES



RESEARCH ASSESSMENT EXERCISE  
HIGHER EDUCATION FUNDING  
COUNCIL FOR ENGLAND (HEFCE) **Universiteit Leiden**

Using Scopus in 2007 has **resulted in our being able to track for 127 more institutions than in 2006** resulting in better showing for many universities. A better representation from non-English language journals has led to better results from many countries where English is not the first language

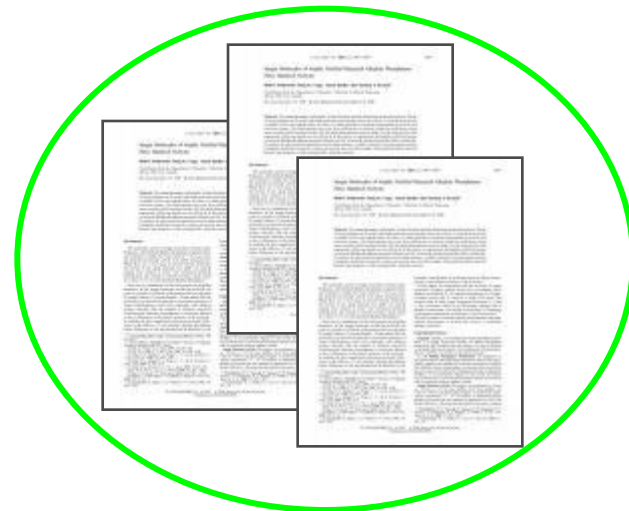
"Science and technology play a crucial role in a country's economic growth," said Mr. Hiroyuki Tomizawa, Principal Administrator, Economic Analysis and Statistics Division, Directorate for Science, Technology and Industry, with the OECD. **"We selected Scopus for its breadth of coverage including journal titles from over 100 nations as well as its advanced features.** Together, these advantages will enable the OECD to execute more sophisticated statistical analyses to guide our member countries."

CWTS found that, in general, Scopus covers much of the same material as the Web of Science (WoS) and ISI Proceedings and in some areas provides a higher level of coverage. Overall, the report found that **Scopus should be considered as a potential alternative to the WoS for the purposes of the REF.**

"The overall percentage of WoS-covered, science-related papers found in Scopus increased over the years, from 89 per cent in 1996 to 97 per cent in 2005. In other words, in these fields and for published articles and reviews the **WoS now constitutes almost a complete subset of Scopus.**"

# Subject Classification in Spotlight

- We do not use a journal based classification
- We have taken research papers and classified based on reference behaviour of the academics in the community = Article level Classification
- Computer capabilities played a role



# Bibliometrics; from theory to application



Article level classification is done using **Co-citation Analysis:**

- 1973 introduced by Henry Small
- We have taken it to 84,000 clusters
- Articles can be in more than 1 subject/cluster

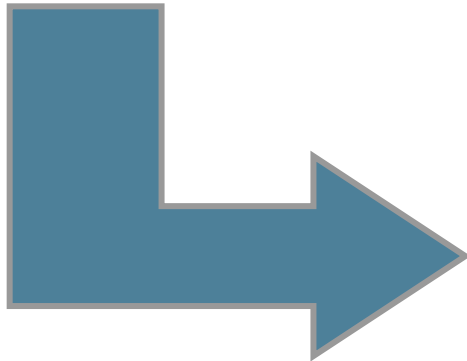
## **Distinctive Competencies:**

- By Klavans & Boyack from SciTech Strategies
- Regrouping based on multidisciplinary and relative market share creating clusters representing your institutes strengths
- Forms disciplines that your researchers are organising themselves around

“Co-citation analysis has had an enormous and measurable impact on the field of information science itself as well as outside the field by scholars who have used it as a tool for mapping their disciplines or specialties.” **Eugene Garfield, 2001**

## What is a university strength?

- **Distinctive Competency (DC)** = The subject area where your institute has a large relative market share compared to your peers active in that same subject area. In fact, in that area, your institute is ranked number 1.
- **Emerging Competency (EC)** = The same, but your institute is not number 1. It hold the potential to be number 1.





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# University Objectives



## ❖ Evaluate research and establish strengths

“Decision making will always be subjective, but we are trying to move to a more evidence-based model.”

## ❖ Recruitment and retention

“We need to put together exceptional research teams in order to solve new problems and get at the funding.” – Vice Chancellor for Research

## ❖ Competition and collaboration

“Often we need to find out for specific areas: how strong we are, who on campus is involved, and what is the scope of our collaboration network?”

## ❖ Allocate scarce resources

“We need anything that helps us make – and defend – smarter decisions about allocating internal funding.” – Vice Chancellor for Research



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# A Circular Library



# ❖ Evaluate Research and Establish Strengths

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SPOTLIGHT



Each color on the circle represents a subject area, such as earth sciences, biology and social sciences

Each circle represents a Distinctive Competency for your institution

Circles positioned towards the middle indicate an interdisciplinary mix

# Allocation of scarce resources



Find rapidly emerging areas of research; potential areas for further investment

Select a view to see in which areas you are growing or reducing market share

Identify research strengths where you have a history of being leaders but are now losing ground



# Use the Details view to gain more information on the competency of interest

SciVal

SPOTLIGHT

Home | Account | About SciVal Spotlight | Contact | Help (g)

Select view TABLE MAP MATRIX DETAILS

Competencies

- 2 (DC)
- 3 (DC)
- 4 (DC)
- 5 (DC)
- 7 (DC)
- 9 (DC)
- 10 (DC)
- 11 (DC)
- 12 (DC)
- 13 (DC)
- 15 (DC)
- 16 (DC)
- 20 (DC)
- 22 (DC)
- 23 (DC)
- 24 (DC)
- 27 (DC)
- 29 (DC)
- 32 (DC)
- 33 (EC)
- 37 (EC)
- 40 (EC)
- 42 (EC)
- 44 (EC)
- 46 (EC)

Distinctive Competency #4  
Main keywords: amino acid; amino acids; fatty acid

General Top Authors Top Institutions Circle Cluster Map

	Market Size (Global)	Institute	Relative Article Share	State-of-the-Art	Reference
	3352.7	229.0	6.8%	5.36	1.0
Growth	10.65% ▲	4.11 ▲	-0.12% ▼		

Institute articles

- Fractionalized: 229.0 (3.8% of 6011 articles total for this institution past 5 years)
- Articles: 391 [View 391 articles in Scopus](#)
- Rank past 5 years: 1
- Rank past 2 years: 1
- Citation count: 1685.4

Top authors institute

Name	Fractions
Author	57.6
Author	29.5
Author	28.2
Author	25.1
Author	17.5

[Go to authors](#)

View the 'Top Authors' for retention and recruitment purposes

View the 'Top Institutions' to identify competitors and potential collaborators

# Recruitment & Retention



Relevant Filters

Select view | TABLE | MAP | MATRIX | DETAILS

## Competencies

- 13 (DC)
- 31 (EC)
- 12 (DC)
- 39 (EC)
- 32 (EC)
- 29 (EC)
- 17 (EC)
- 6 (DC)
- 5 (DC)
- 3 (DC)**
- 2 (DC)
- 23 (EC)
- 27 (EC)
- 18 (EC)
- 22 (EC)
- 41 (EC)
- 15 (EC)
- 45 (EC)
- 26 (EC)
- 40 (EC)
- 7 (EC)
- 43 (EC)
- 36 (EC)
- 37 (EC)
- 38 (EC)
- 48 (EC)
- 24 (EC)
- 9 (EC)
- 20 (EC)
- 16 (EC)
- 25 (EC)
- 1 (EC)
- 14 (EC)

## Distinctive Competency #3

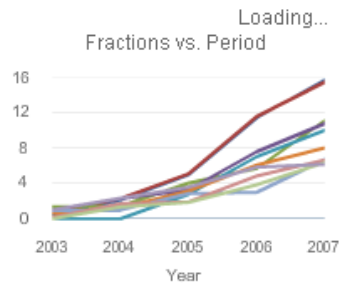
Main keywords: avian influenza; influenza virus; influenza viruses

Change region: Global  
 How: Global, Asian Pacific, Thailand

General | Top Authors | Top Institutions | Circle | Clust

View top authors:

- All institutions
- Chulalongkorn Univer... authors
- Competing authors



## Competing Authors

Name	Institution	Fractions	Articles	SotA	Cited
1. Fouchier R.A.M.	Erasmus University Rot...	15.7	27	0.1	583.8
2. Osterhaus A.D....	Erasmus University Rot...	15.5	27	-0.0	586.2
3. <b>Swayne D.E.</b>	U.S. Department of Agri...	11.1	23	-3.2	81.1
4. Peiris J.S.M.	University of Hong Kong	10.8	22	2.1	1081.9
5. Munster V.J.	Erasmus University Rot...	10.0	13	-0.9	315.0
6. Rimmelzwaan G...	Erasmus University Rot...	8.0	17	1.2	388.6
7. Stallknecht D.E.	University of Georgia	6.7	9	-7.0	42.3
8. Kuiken T.	Erasmus University Rot...	6.6	14	2.4	301.2
9. Averkiev S.V.	Moscow State University	6.4	8	-5.5	5.4
10. Guan Y.	University of Hong Kong	6.2	18	1.4	1076.5

## Osterhaus A.D.M.E.

Primary institution: Erasmus University Rotterdam

Number of DCs: 2

## Scopus

Articles in Scopus: 756 [View 756 articles in Scopus...](#)

Hirsh index: n/a

Profile: [View Scopus profile...](#)

## Competencies

Competency Number	Fractions	Articles	Keywords
3 (DC)	32.1	41	avian influenza; influenza virus; influenza viruses
18 (EC)	5.8	7	blood donors; chronic hepatitis; viral load

More information to make strategic decisions



# ❖ Competition & Collaboration



Select view **TABLE** **MAP** **MATRIX** **DETAILS** Relevant Filters

- Competencies**
- 13 (DC)
  - 31 (EC)
  - 12 (DC)
  - 39 (EC)
  - 32 (EC)
  - 29 (EC)
  - 17 (EC)
  - 6 (DC)
  - 5 (DC)
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  - 27 (EC)
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  - 41 (EC)
  - 15 (EC)

## Distinctive Competency #3

Main keywords: avian influenza; influenza virus; influenza viruses

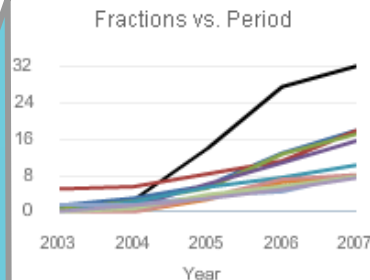
Change region **Global**

[How to read this page >](#)

**General** **Top Authors** **Top Institutions** **Circle** **Cluster Map**

View top institutions:

- All institutions
- Only collaborating institutions



### All institutions

Institution	Fractions	Articles	RL	SotA	Cited
1. Chulalongkorn University	32.08	41	0.8	1.0	322.4
2. University of Hong Kong	17.95	53	1.1	2.4	1282.2
3. U.S. Department of Agriculture	17.81	43	0.3	-2.6	120.8
4. Erasmus University Rotterdam	17.15	34	0.9	0.3	609.2
5. Centers for Disease Control and P...	15.61	51	0.1	2.2	454.0
6. Mahidol University	10.30	19	0.3	1.0	502.2
7. University of Kalmar	8.19	10	0.1	-1.8	266.7
8. University of Georgia	8.13	14	0.1	-6.0	49.9
9. Umea University	8.13	10	0.1	-2.1	278.7
10. World Health Organization	7.73	17	0.1	3.4	483.3
11. Moscow State University	7.48	10	0.0	-5.0	6.0

With whom have you partnered before



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# SciVal Spotlight enables you to:



## EVALUATE....your research strengths

- View your individualized map, generated using citation data from more than 16,000 peer-reviewed journals
- View your standing relative to the competition over a multitude of disciplines

## ESTABLISH.....your strategy

- Identify specific areas of research excellence and emerging strengths.
- Identify new research opportunities
- Review competitive standing on a global stage
- Determine areas for further investment

## EXECUTE.....your plan

- Identify potential collaborators.
- Search for top researchers to recruit and retain SciVal top performers.
- Spotlight reveals the leading researchers in their fields.

Thank you

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