



# How can Elsevier SciVal solutions support Czech researchers and research management?

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# Trends in science

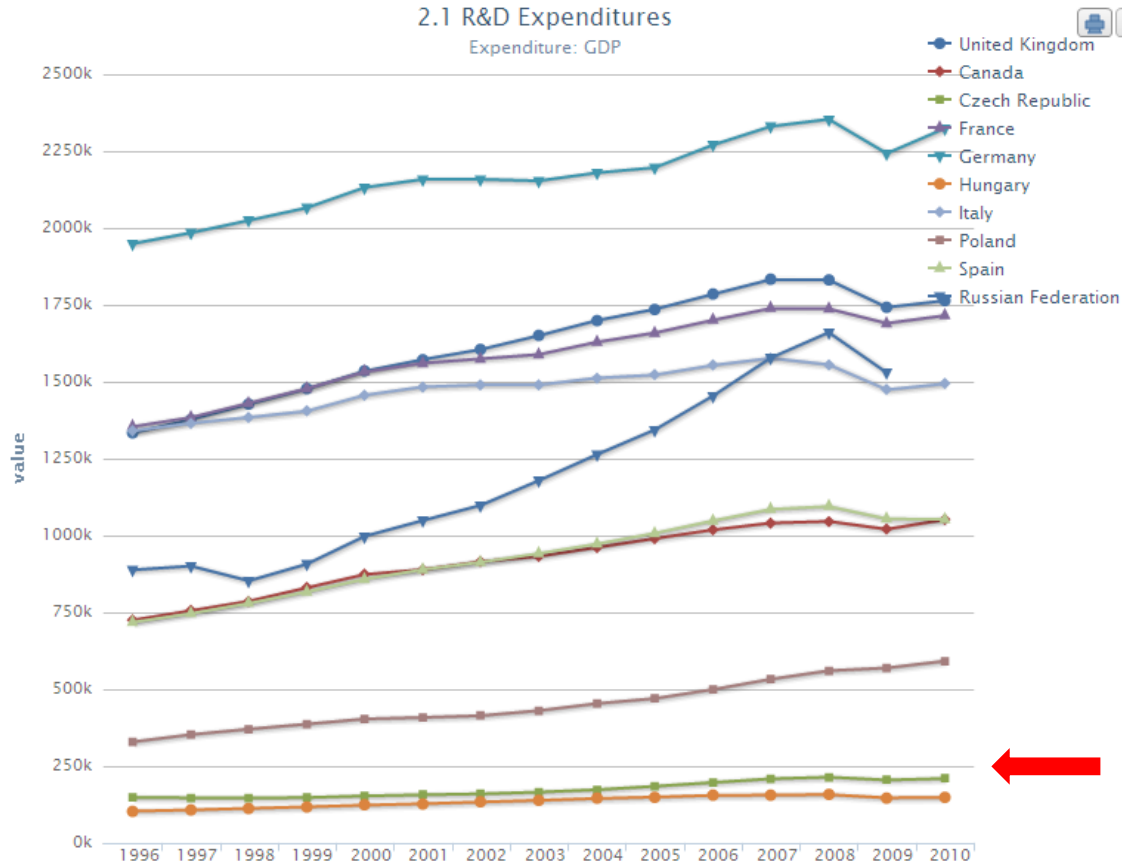
# Increase in Global Competition



## R&D spending, selected countries 1996-2015

Expenditure:

Output:

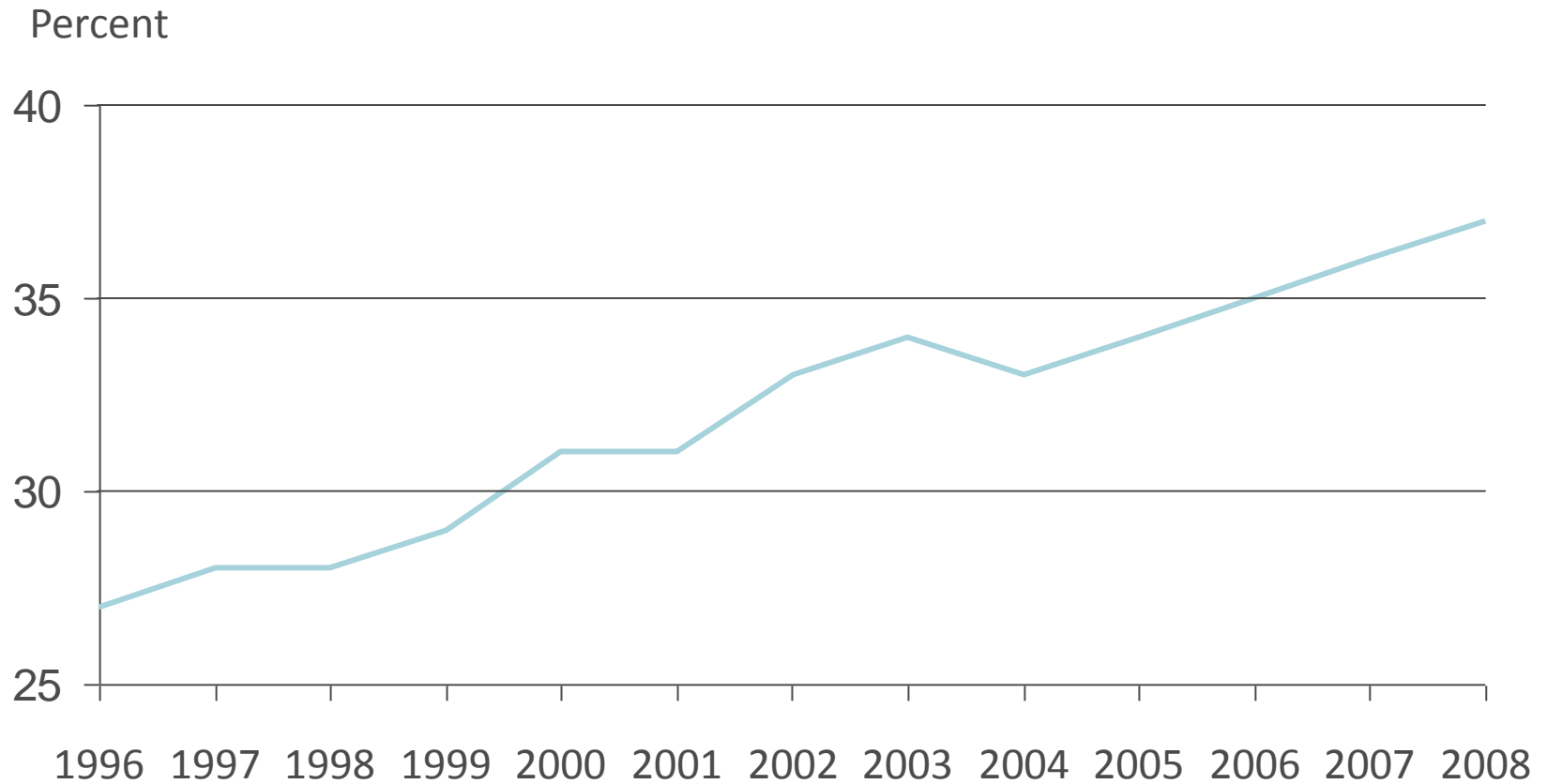


Source: BIS portal, 2011



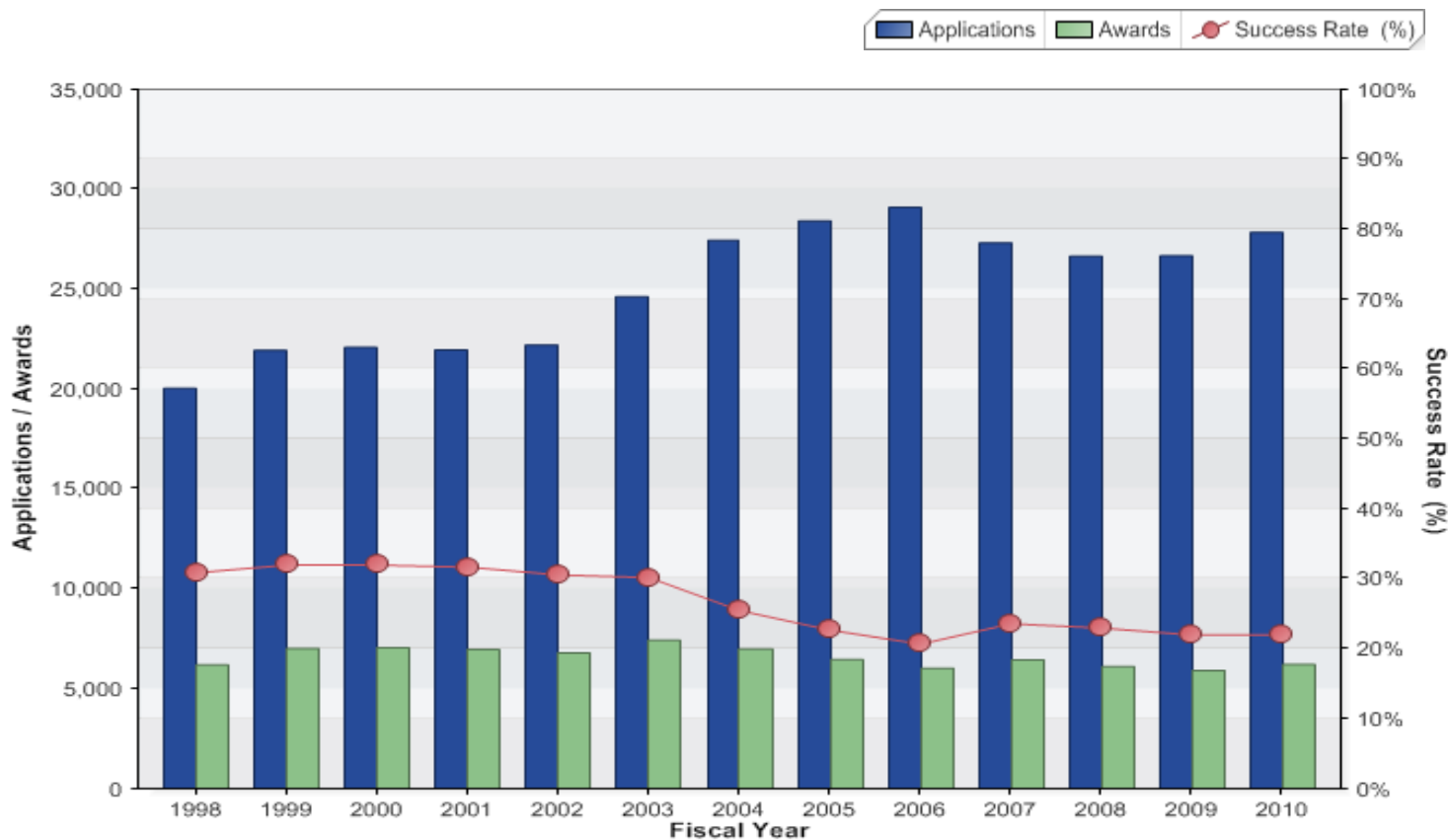
# Increase in Global Collaboration

Proportion of the world's papers produced with more than one international author



Source: Knowledge, Networks and Nations: Global scientific collaboration in the 21st century, The Royal Society, 2011

# Increased Competition for Limited Resources

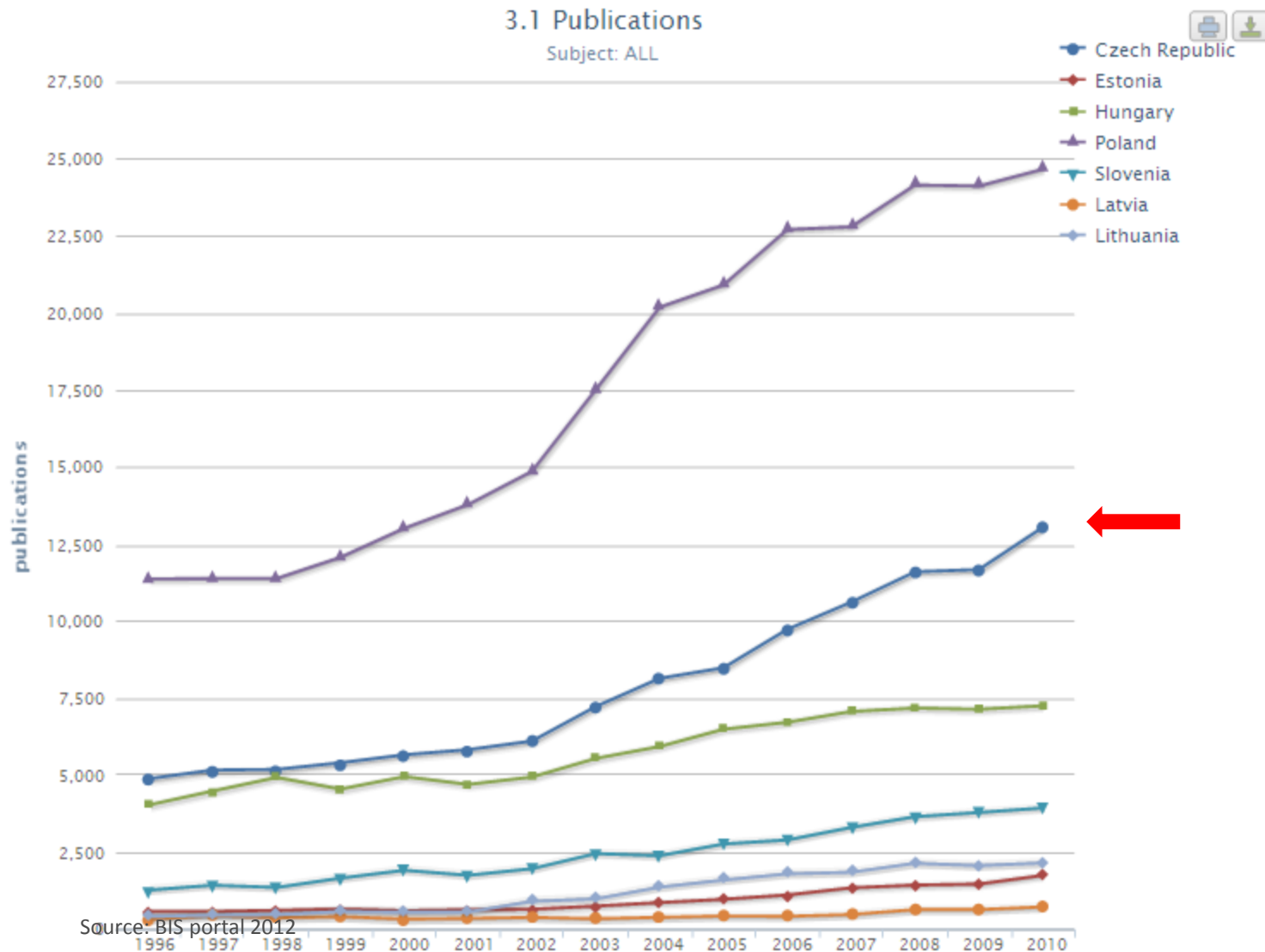


**Increase in applications, but lower awards and success rate**

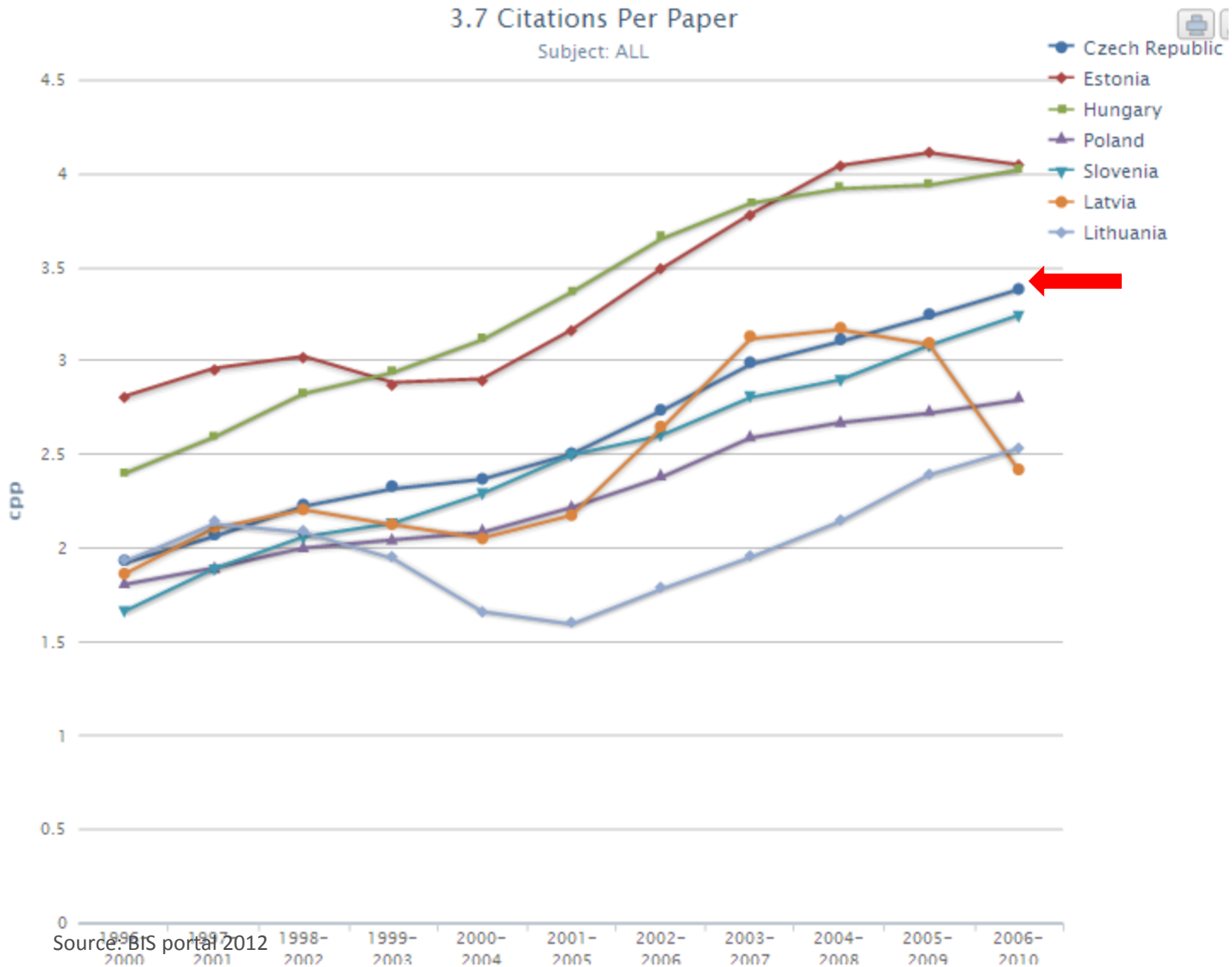
Source: NIH IMPAC, Success Rate File, April 15, 2011 - <http://report.nih.gov/NIHDatabook/>



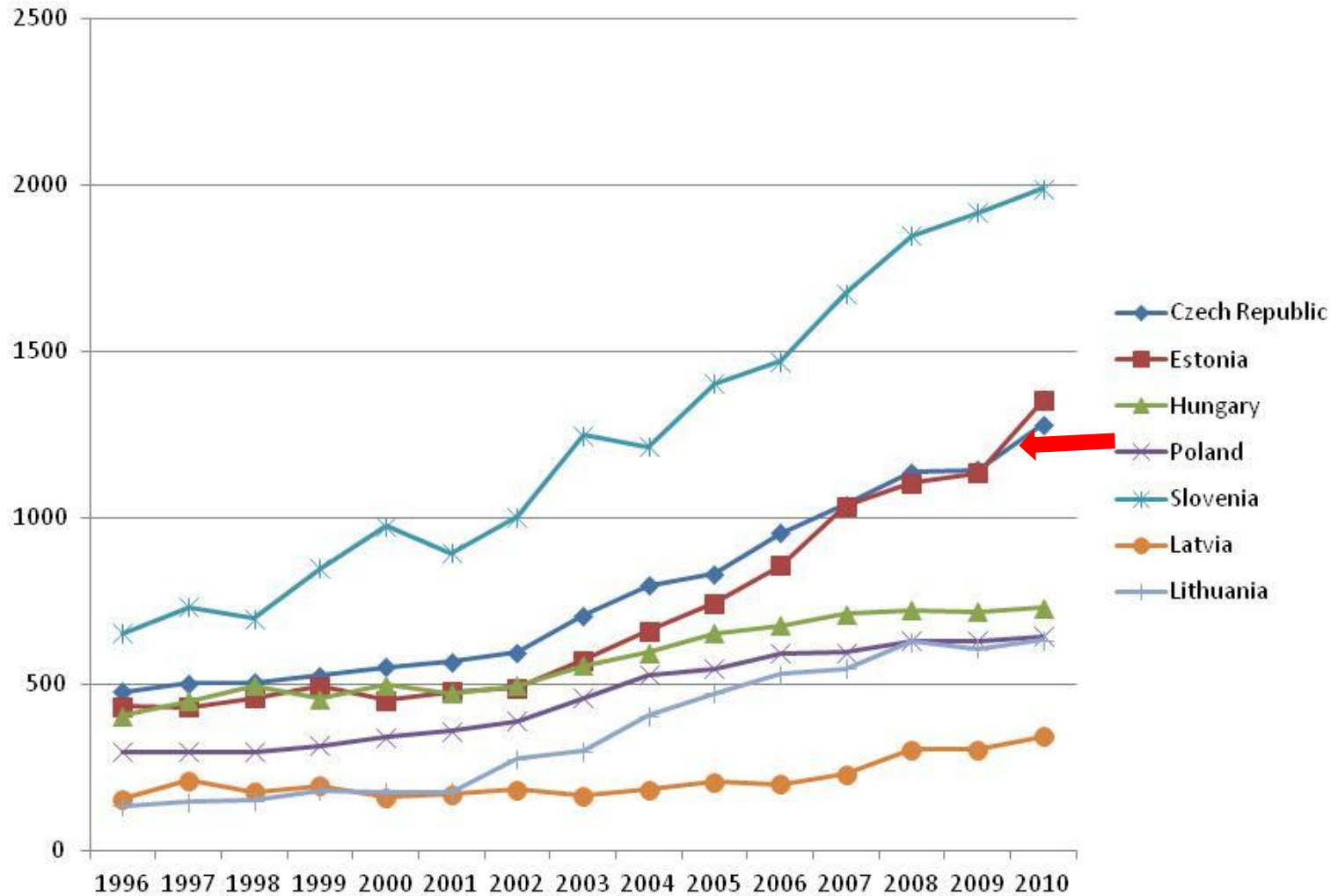
# Growing number of publications



# Citations per Publication needs improvement



# Articles per Million inhabitants

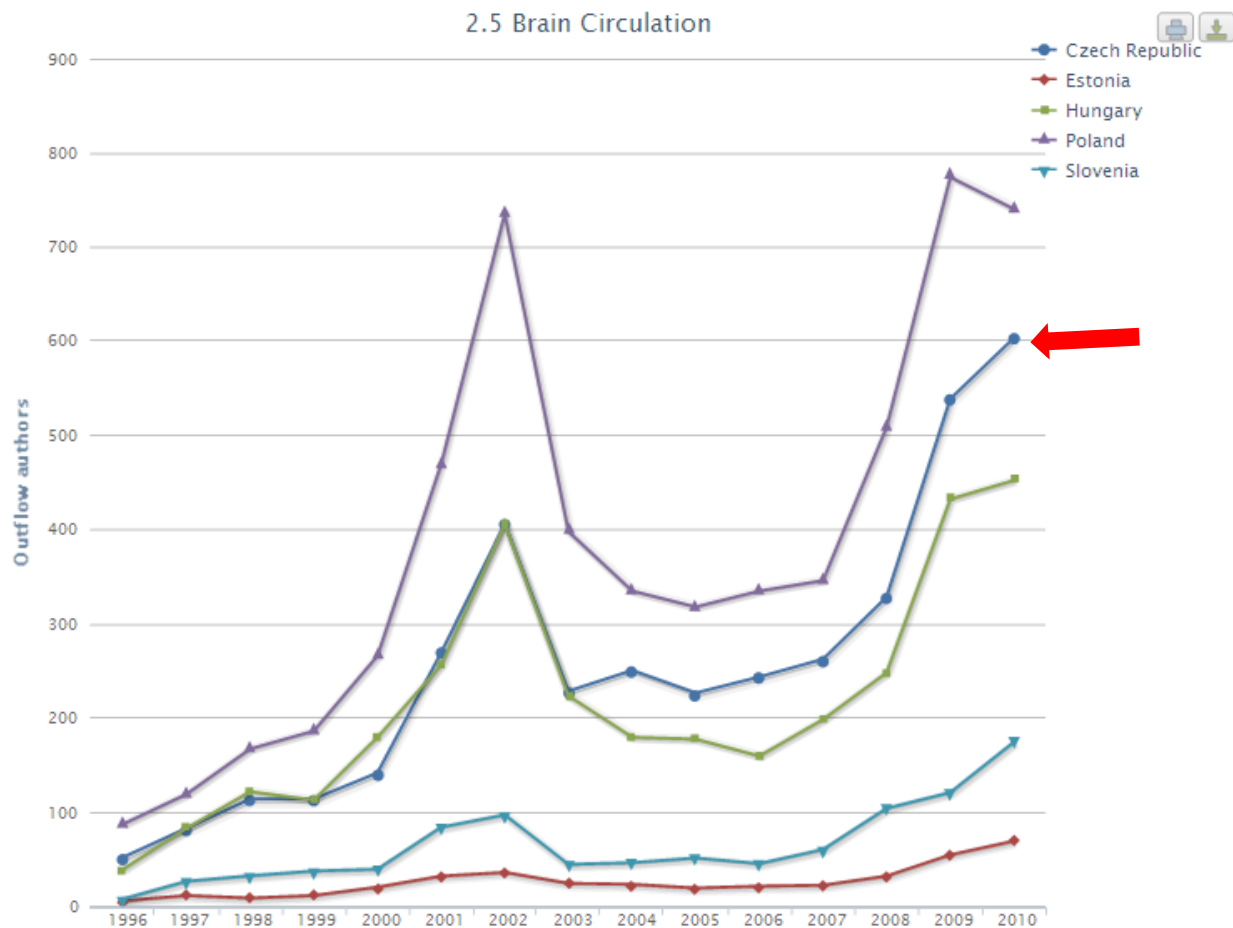




# Brain Circulation - outflow

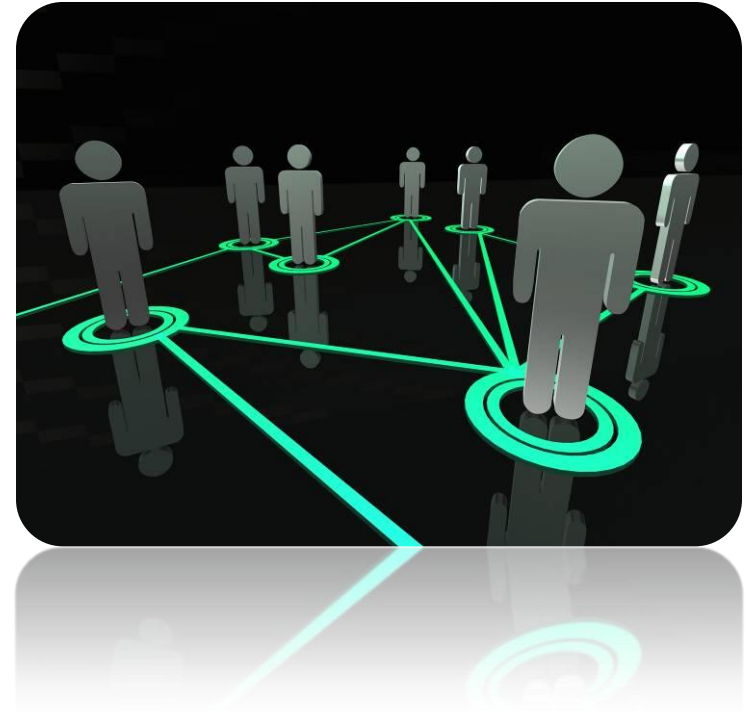
Data:

Output:



# THE NEW REALITY OF RESEARCH TODAY

- Crosses national boundaries – **international** cooperation
- Overarches multi-jurisdictional regulation
- **Networks** energetically in real and virtual space and time
- Straddles between **competition** and **collaboration**
- Exhibits high **mobility** of resources, people, ideas, technologies and infrastructure
- Responds and reacts to public and private pressures



Elsevier develops  
modern solutions to  
address those  
challenges

# Through our data, we can provide various insights that help answer your key questions

Demonstrating Excellence

- What are the research strengths of my institute?

Collaboration and Competition

- Which researchers/institutions are strong in the field as well?

Evaluations

- Measuring research performance based on some additional objective indicators.

Raise and Defend Funding

- Have facts at hand to show expertise to funding bodies

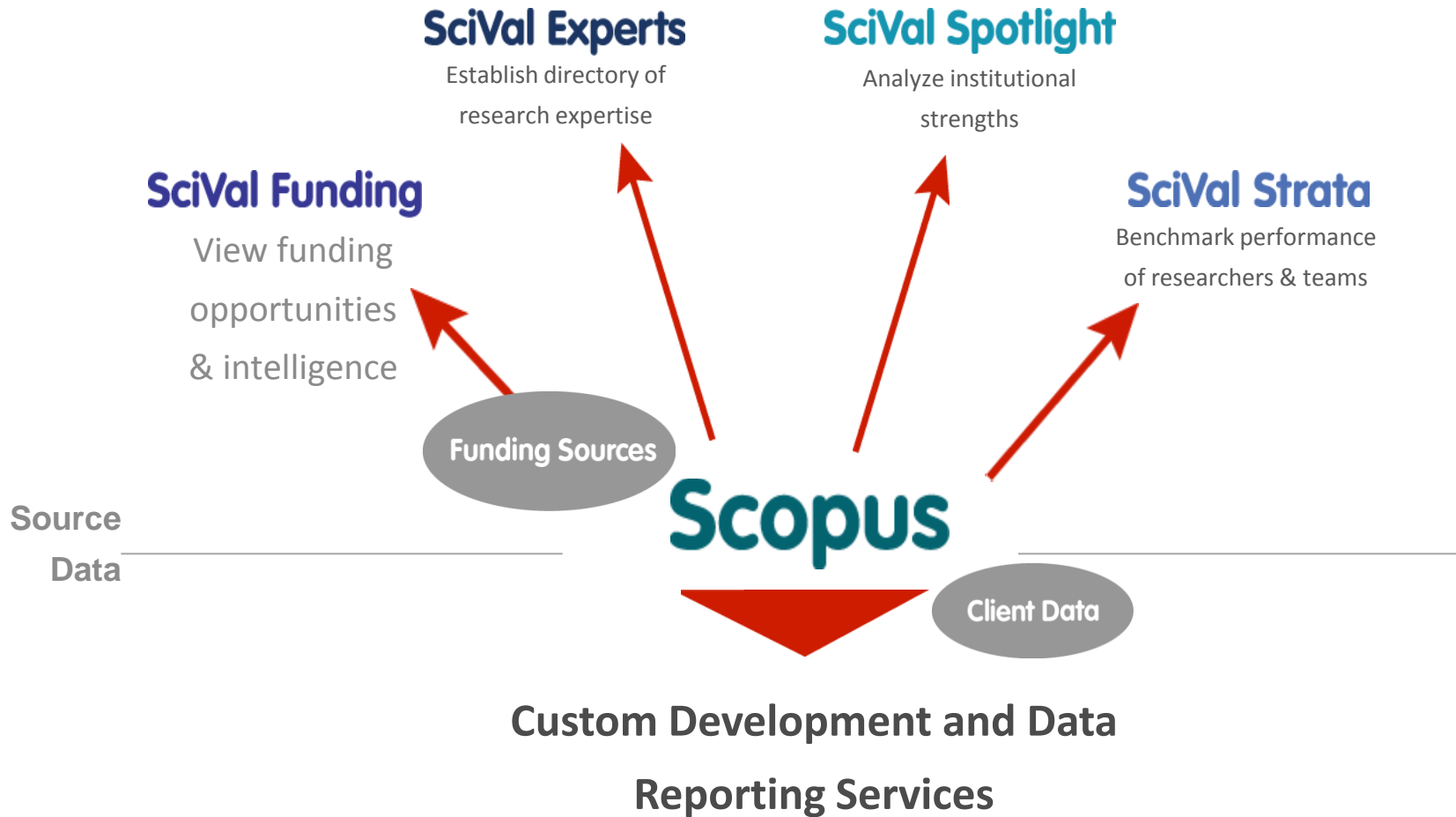
Recruitment and Retention

- Finding new faculty members is the highest priority issue on the administrative agenda.

Facilitating cooperation inter- and externally

- How can we assemble research teams easily?

# The components of the SciVal suite



# What is SciVerse Scopus?

The largest abstract and citation database of peer-reviewed research literature and quality web sources.

More than 19,500 titles from more than 5,000 international publishers worldwide

Over 45 million records, 23 million patents from 5 patent offices worldwide

Scopus also offers full integration of the scientific web in its search results with: 435 million scientific web pages (Scirus)

Modern „Discovery tools“ – Author and Affiliation search, Author Analyzer, Journal Analyzer, Citations Tracking etc

# Scopus metrics support key European assesment organisations

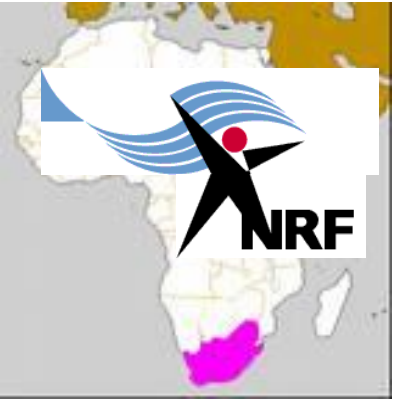
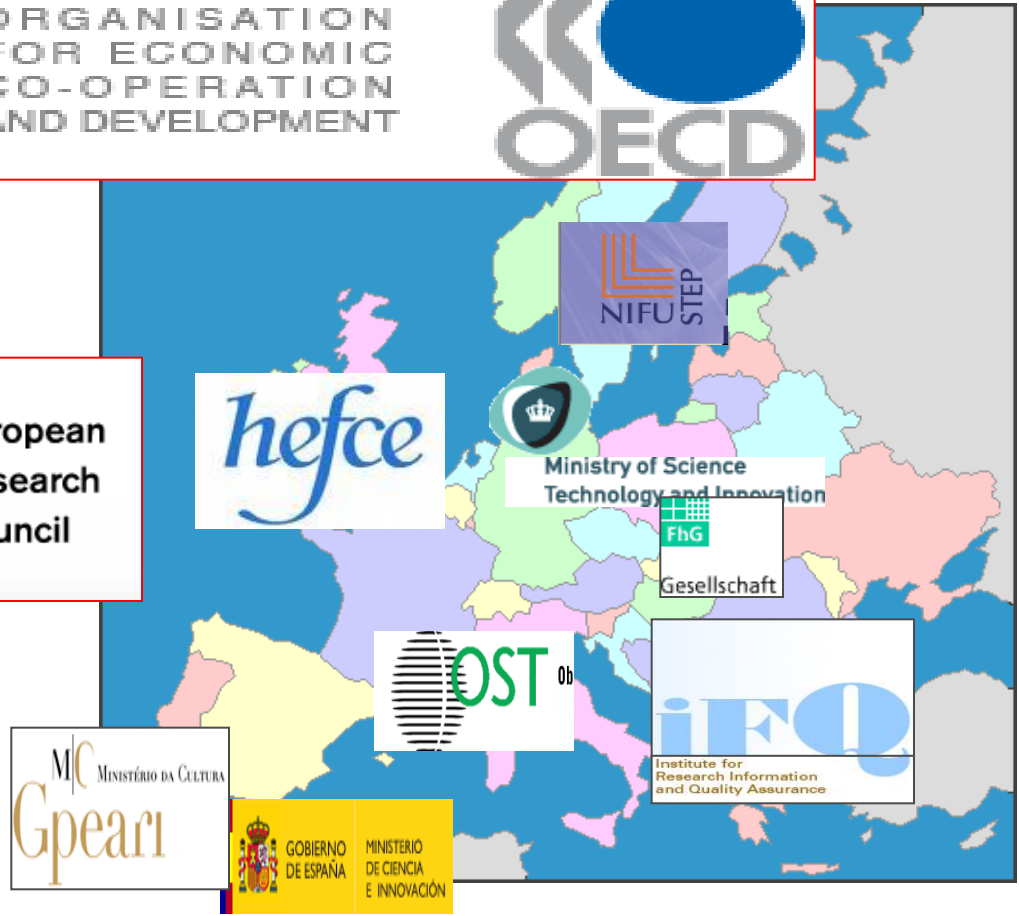
Using  
Scopus



European  
Research  
Council



ORGANISATION  
FOR ECONOMIC  
CO-OPERATION  
AND DEVELOPMENT



NRF



# Understanding research strengths of Czech Republic



# Where is Czech Republic today?

country Czech Republic | year 2010 | [Change](#) | [Download as CSV](#) | [Print](#)

Country	Articles	Growth	Articles by sector			Citation count	CPA ▼	SotA
			Academic	Government	Industry			
Switzerland	126,128	5.29% ▲	82.40%	10.83%	6.78%	958,108	7.60	1.06
Netherlands	176,059	5.93% ▲	81.43%	10.95%	7.62%	1,228,212	6.98	0.80
Sweden	113,336	3.50% ▲	94.78%	2.55%	2.67%	744,285	6.57	0.44
United States	2,096,179	2.22% ▲	78.06%	13.43%	8.52%	13,509,391	6.44	0.30
United Kingdom	567,444	3.50% ▲	85.70%	7.67%	6.64%	3,560,965	6.28	0.36
Germany	507,177	4.65% ▲	71.62%	20.11%	8.27%	3,062,573	6.04	0.70
Canada	327,531	4.35% ▲	85.70%	8.50%	5.80%	1,887,960	5.76	0.05
France	384,359	4.84% ▲	57.39%	28.88%	13.73%	2,074,728	5.40	0.24
Italy	307,048	4.80% ▲	75.10%	17.87%	7.03%	1,629,555	5.31	0.48
Australia	224,804	7.62% ▲	80.74%	8.70%	10.56%	1,189,627	5.29	0.10
Spain	257,099	7.19% ▲	70.09%	16.94%	12.96%	1,211,202	4.71	0.36
Japan	484,672	1.56% ▲	75.79%	16.39%	7.82%	2,086,865	4.31	-0.07
<b>Czech Republic</b>	<b>50,844</b>	<b>7.71% ▲</b>	<b>64.78%</b>	<b>34.46%</b>	<b>0.76%</b>	<b>195,388</b>	<b>3.84</b>	<b>-0.19</b>
Korea (Republic of)	212,974	8.56% ▲	76.48%	18.50%	5.02%	715,658	3.36	0.26
Taiwan	148,576	8.95% ▲	83.19%	9.86%	6.95%	479,430	3.23	-0.11
Poland	103,911	4.30% ▲	81.06%	17.71%	1.22%	333,547	3.21	-0.63
Brazil	173,087	10.50% ▲	89.59%	9.22%	1.19%	494,927	2.86	-0.90
India	233,302	14.18% ▲	72.45%	24.64%	2.91%	631,358	2.71	-2.48
Turkey	113,479	9.22% ▲	94.78%	1.33%	3.89%	302,890	2.67	-1.32
Russian Federation	128,905	3.25% ▲	38.17%	61.83%	0.00%	311,234	2.41	-3.37
China	969,437	22.83% ▲	85.68%	12.46%	1.85%	2,145,883	2.21	0.86

Region:  ▼

# Understanding the competencies

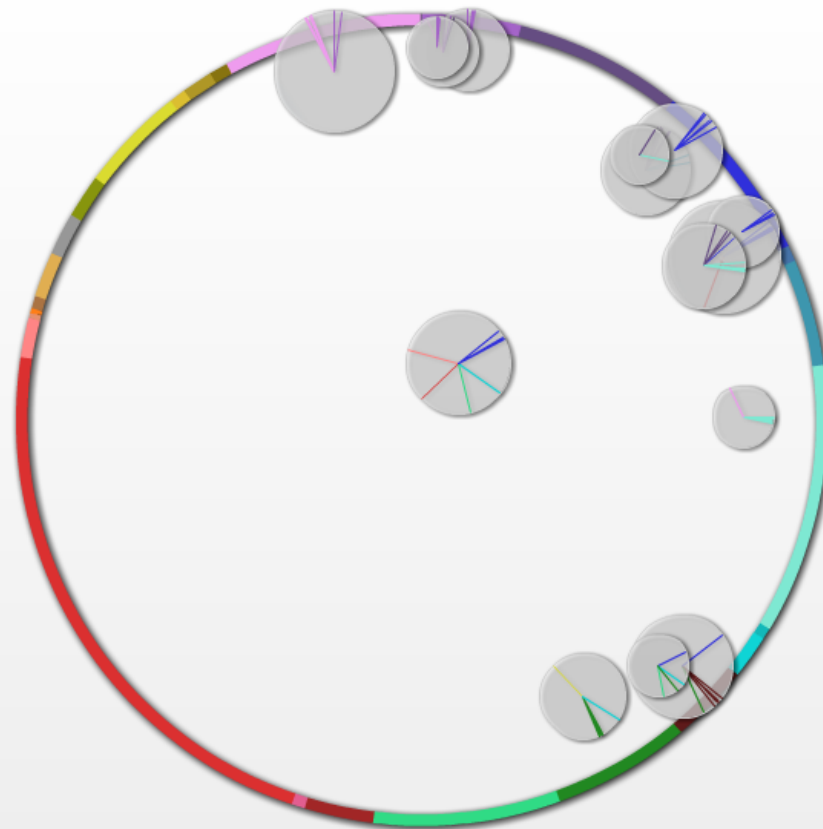
country **Czech Republic** | year **2010** | [Change](#)

## Competencies of the Czech Republic: 15

 [Export image](#)

### Subject areas

- Mathematics (4) +
- Physics and Astronomy (4) +
- Chemistry (7) +
- Chemical Engineering (0) +
- Materials Science (1) +
- Engineering (3) +
- Energy (0) +
- Environmental Science (3) +
- Earth and Planetary Sciences (1) +
- Agricultural and Biological Sciences (3) +
- Biochemistry, Genetics and Molecular Biology (2) -
- Aging (0)
- Biochemistry (0)
- Biochemistry, Genetics and Molecular Biology (miscellaneous) (0)
- Biophysics (0)
- Biotechnology (0)
- Cancer Research (1)
- Cell Biology (1)
- Clinical Biochemistry (0)
- Developmental Biology (0)
- Endocrinology (0)
- General Biochemistry, Genetics and Molecular Biology (0)
- Genetics (0)
- Molecular Biology (0)
- Molecular Medicine (0)
- Physiology (0)
- Structural Biology (0)
- Immunology and Microbiology (0) +
- Veterinary (0) +



### Subject areas

- Mathematics +
- Physics and Astronomy +
- Chemistry +
- Chemical Engineering +
- Materials Science +
- Engineering +
- Energy +
- Environmental Science +
- Earth and Planetary Sciences +
- Agricultural and Biological Sciences +
- Biochemistry, Genetics and Molecular Biology +
- Immunology and Microbiology +
- Veterinary +
- Medicine +
- Pharmacology, Toxicology and Pharmaceuticals +
- Health Professions +
- Nursing +
- Dentistry +
- Neuroscience +
- Arts and Humanities +
- Psychology +
- Social Sciences +
- Business, Management and Accounting +
- Economics, Econometrics and Finance +
- Decision Sciences +
- Computer Science +
- Multidisciplinary +

# Matrix view – where is the future?

How can we increase our market share in these research areas?

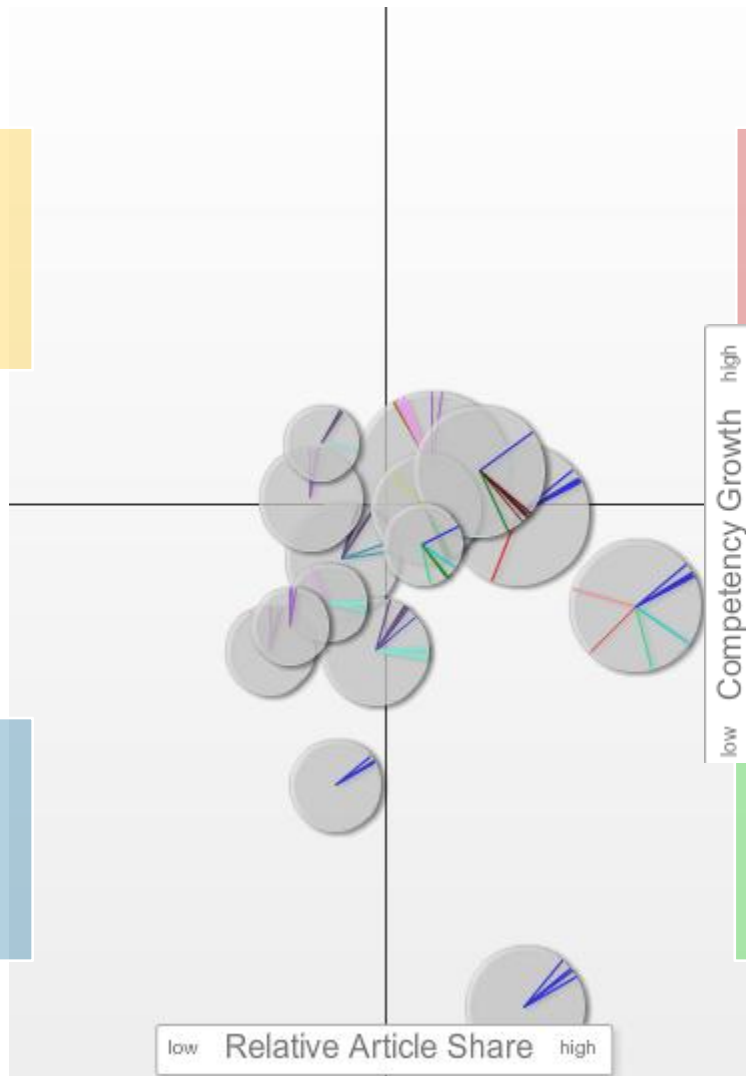
→ Active “Recruitment”

How can we defend our presence in these research areas?

→ “Retain” key talent

Research areas that are internationally declining with low article share

How can we get the highest impact out of these research areas?



# Matrix view – find the details

How can we increase our market share in these research areas?

→ Active “Recruitment”

Research areas that are internationally declining with article share

**Articles published in this country:**  
334

**Authors in this country:** Adam V.;  
Kizek R.; Barek J.

**Keywords:** Electrodes; Voltammetry;  
Limit of Detection

**Disciplines:**

Analytical Chemistry	92.9%
General Medicine	4.4%
General Chemistry	2.7%

[More details »](#)

low Relative Article Share high

can we defend our presence in these research areas?

→ “Retain” key talent

How can we get the highest impact out of these research areas?

# Competency overview

## Competency DC #2 Electrodes; Voltammetry; Limit of Detection

Select another competency ▾

Summary

Trends

Disciplines

Countries

Institutions

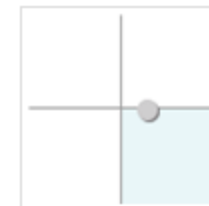
Authors

Compare

Methodology

### Articles published in this field (2006-2010)

	Articles	Annual growth	Citations
Articles published worldwide	2,805	+6.9% ▲	17,551
Articles published in the Czech Republic	<b>334</b>	+18.0% ▲	2,356



Why is this field a distinctive competency of the Czech Republic?

Show the contribution to this field from:

Czech Republic

all contributing countries worldwide

### Top keywords for the Czech Republic

Voltammetry	
Electrodes	
Mercury amalgams	
Heavy metals	
Metallothionein	
Electrochemistry	
Carbon	
Silver	
Proteins	
Ions	

### Top authors from the Czech Republic

[details »](#)

Adam V.	
Kizek R.	
Barek J.	
Trnková L.	
Paleček E.	
Kizek R.	
Hubálek J.	
Beklová M.	
Křížková S.	
Havel L.	

# Who are the top authors, what are the trends?

Competency DC #2 Electrodes; Voltammetry; Limit of Detection

Select another competency ▾

Summary Trends Disciplines Countries Institutions **Authors** Compare Methodology

Top authors in this field from Czech Republic

overview breakdown by keyword

Author		Articles published in this field	Fractionalized article count
1. Adam V.	Mendel University of Agriculture and Forestry; Masaryk University; Brno University of Technology (2 more)	102	71.8
2. Kizek R.	Mendel University of Agriculture and Forestry; University of Veterinary and Pharmaceutical Sciences; Czech Academy of Sciences	73	47.3
3. Barek J.	Charles University	55	43.1
4. Trnková L.	Masaryk University; Brno University of Technology; Mendel University of Agriculture and Forestry	57	41.2
5. Paleček E.	Czech Academy of Sciences; Masaryk University	32	28.2
6. Kizek R.	Mendel University of Agriculture and Forestry; Brno University of Technology; Masaryk University (1 more)	36	27.5
7. Hubálek J.	Brno University of Technology; Czech Academy of Sciences	32	25.5
8. Beklová M.	University of Veterinary and Pharmaceutical Sciences	36	25.5
9. Křížková S.	Mendel University of Agriculture and Forestry; Masaryk University; Charles University	31	20.7
10. Havel L.	Mendel University of Agriculture and Forestry; Masaryk University		

Download authors list (388 matching authors)

Competency DC #2 Electrodes; Voltammetry; Limit of Detection

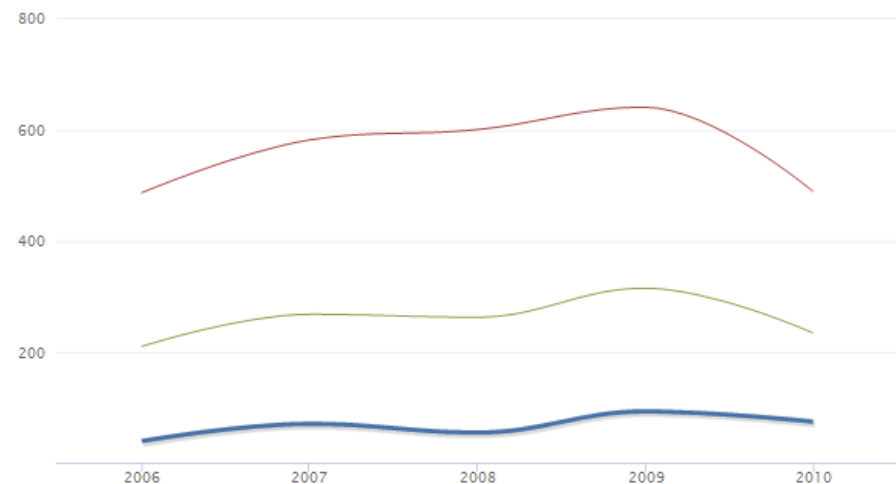
Select another competency ▾

Summary **Trends** Disciplines Countries Institutions Authors Compare Methodology

Show: Overall trend

- Worldwide
- Europe
- Czech Republic

Trend view: Articles published in this field, by year (2006-2010)



# Which other countries work on this as well?

**Competency DC #2** Electrodes; Voltammetry; Limit of Detection

Select another competency ▼

Summary

Trends

Disciplines

Countries

Institutions

Authors

Compare

Methodology

View the top countries  ▼

overview  breakdown by  ▼

Country		Articles published in this field	Fractionalized article count	
1. Czech Republic	Europe	334	226.4	
2. China	Asia Pacific	418	125.9	
3. United States	North America	366	92.1	
4. United Kingdom	Europe	148	54.7	
5. Spain	Europe	155	51.9	
6. France	Europe	141	45.0	
7. Germany	Europe	124	39.5	
8. Japan	Asia Pacific	129	37.4	
9. Italy	Europe	114	32.9	
10. Brazil	South America	94	32.0	

[Download countries list](#) (90 matching countries)

International  
Collaboration  
is key to high quality

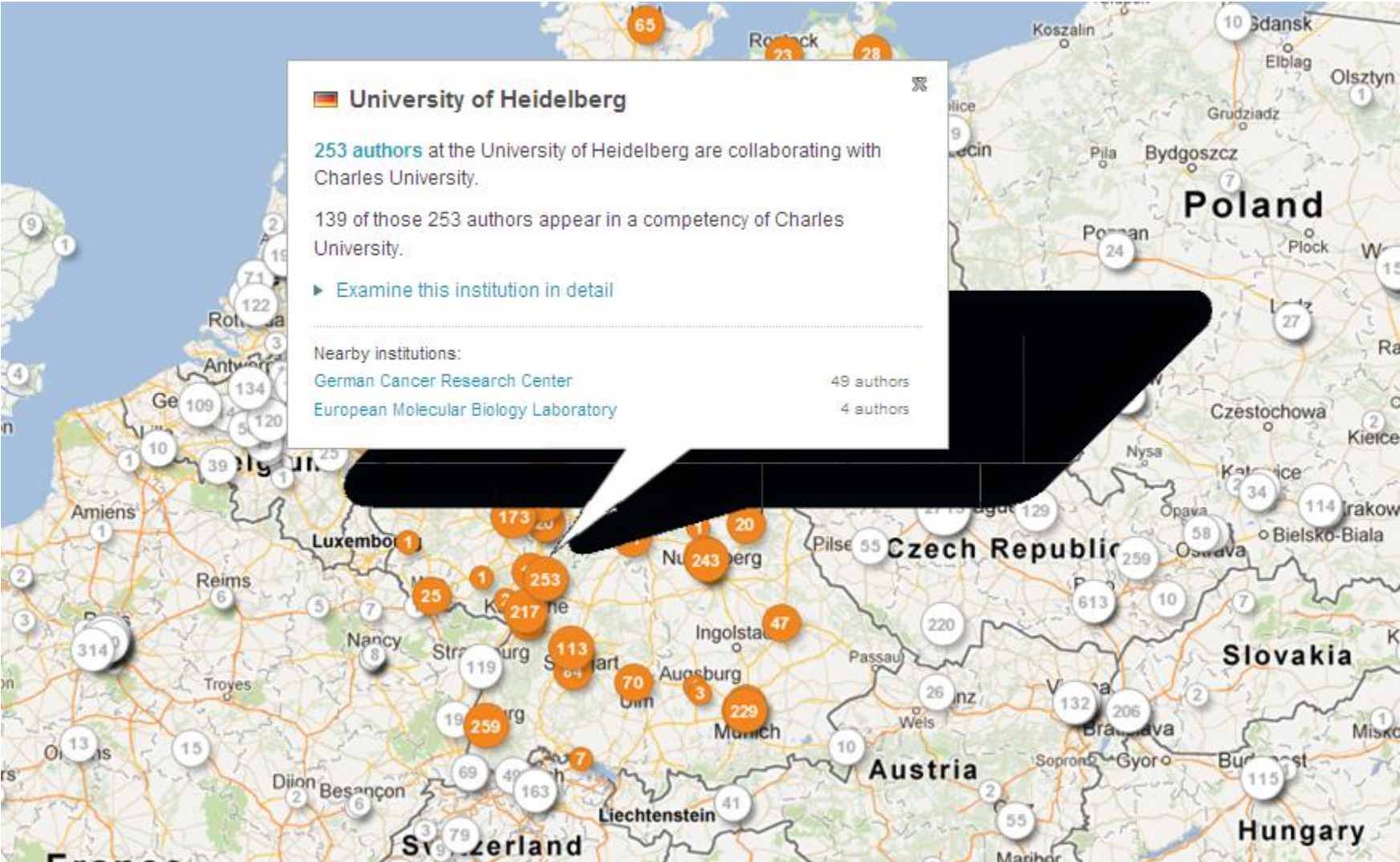








# Explore the institution for potential collaboration



# Where is the collaboration taking place?



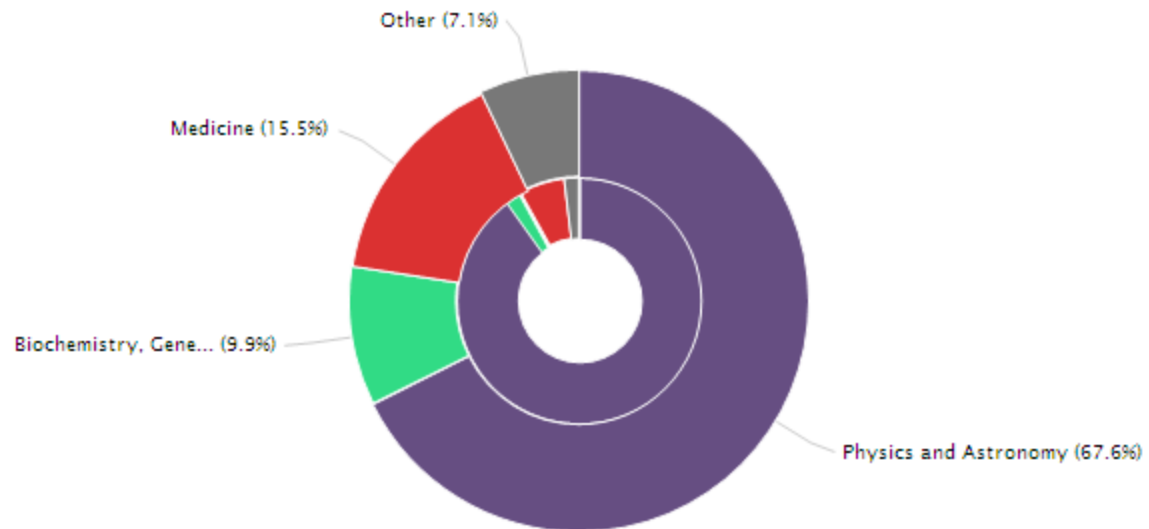
## Where is collaboration taking place?

190 articles were **co-authored** by researchers at Charles University and the University of Heidelberg

99 of those 190 co-authored articles (52.1%) appear in a competency of Charles University



Co-authored articles | Co-authored articles in competencies | Both



**Outer ring:** All co-authored articles, by subject area  
**Inner ring:** Co-authored articles in competencies, by subject area

# ... And where are the opportunities for new collaboration?



## Where are opportunities for new collaborations?

**628** articles from the University of Heidelberg appear in a competency of Charles University

**529** of those 628 articles in competencies (84.2%) were **not co-authored** with Charles University

[View list of potential co-authors at the University of Heidelberg \(828\)](#)



## Not yet collaborating authors in competencies

[Choose a different set of authors](#) ▼

Author	Articles in competencies	Co-authored articles in competencies	Competencies
1. Bierhaus A.	30	0	7
2. Nawroth P.P.	27	0	5
<a href="#">View author profile in SciVerse Scopus</a>   <a href="#">View h Index</a>			
This author did not co-author any articles with Charles University			
<a href="#">View list of co-authored articles (0)</a>   <a href="#">View list of co-authored articles in competencies (0)</a>			
<a href="#">View list of not co-authored articles in competencies (27)</a>			
Competency	Keywords	Articles by this author	Co-authored articles
DC #2	Electrophoresis, Capillary; Divorce; Capillaries	1	0
DC #4	Resistin; Adiponectin; Insulin Resistance	3	0
EC #21	Doxorubicin; Anthracyclines; Alcohol Oxidoreductases	1	0
EC #27	Kidney Transplantation; Transplants; Transplantation	2	0
EC #38	Glycosylation End Products, Advanced; Pregnancy-Associated Plasma Protein-A; Patients	20	0
3. Büchler M.W.		16	0
4. Muckenthaler M.U.		11	0
5. Weisshaar E.		11	0
6. Ritz E.R.		11	0
7. Kovács G.		9	0
8. Wettschureck N.		8	0
9. Auffarth G.U.		8	0

# Analyzing researchers and research teams

# Compare authors and teams within defined area of science

-   Berek, Jiri
-   Roithová, Jana
-   Čísařová, Ivana
-  Czech Republic
-  Europe
-  World

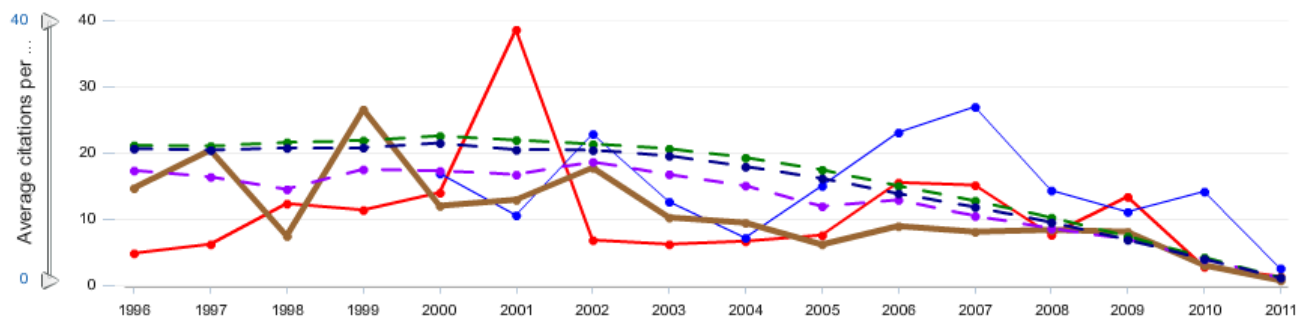
Benchmark **Influence** Collaboration

Citation Benchmark

Options Chart view Table view

Reference Field **Chemistry**

Manage my Reference Fields | Open Source Overview

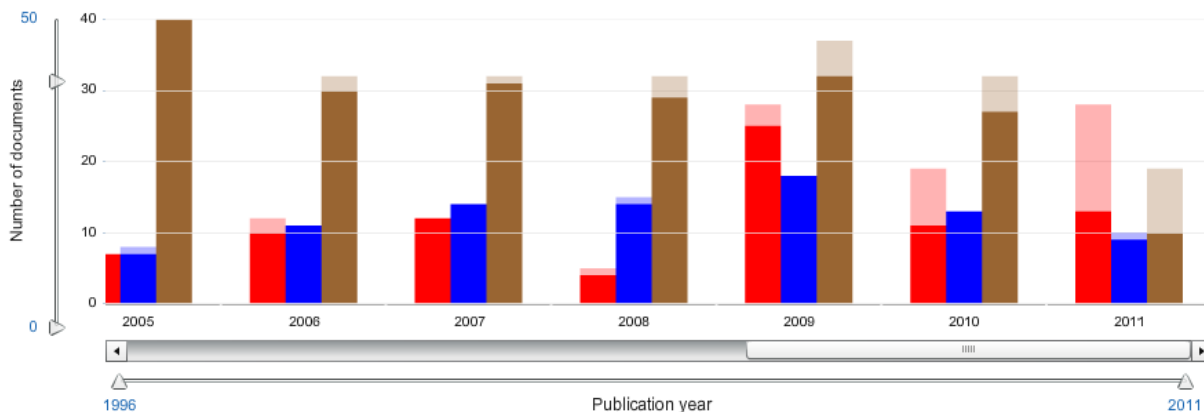


Benchmark **Influence** Collaboration

Citation Indices Document Output Citations Received Cited / Uncited Documents

Options Chart view Table view

Cited Uncited



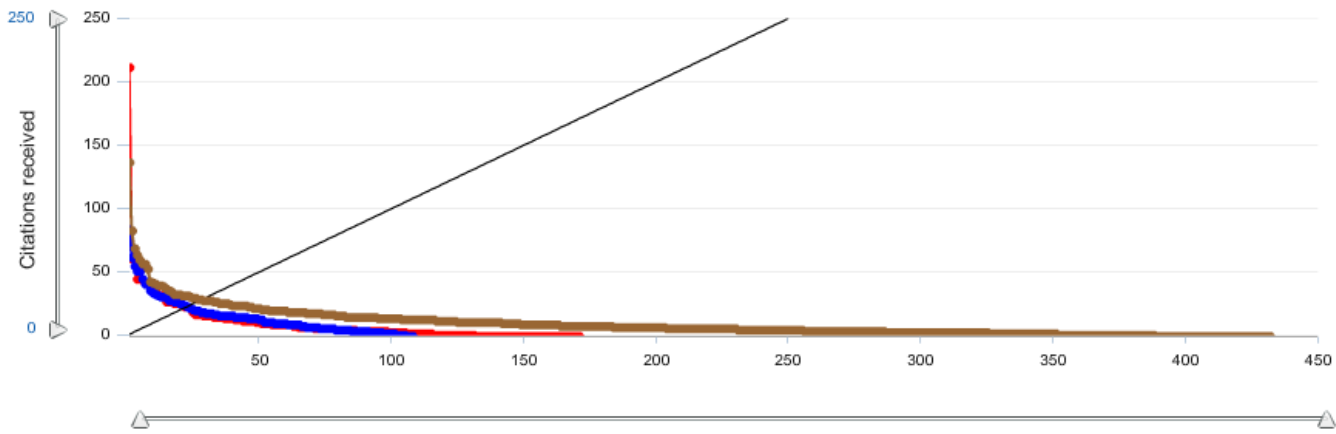
# Authors influence and collaboration

Benchmark Influence **Collaboration**

Citation Indices Document Output Citations Received Cited / Uncited Documents

Options Chart view Table view

*h*-index for years 1996 to >2012



- Barek, Jiri
- Roithová, Jana
- Čísařová, Ivana

Benchmark Influence **Collaboration**

Geographical Collaboration Network Author Network

Options Chart view Table view

1996 - 2011

Views Only documents with country information are represented in this analysis.

World

Region

**Cumulative**

Trend

**Europe**

- Barek, Jiri**  
Document output = 157  
[View documents in Scopus](#)
- Roithová, Jana**  
Document output = 105  
[View documents in Scopus](#)
- Čísařová, Ivana**  
Document output = 419  
[View documents in Scopus](#)





How to find experts  
for specific research  
projects?

# How to identify an expert who has experience in a certain area?

Enter the concept of interest in the search field (or author name, or full text)

University of Michigan  
Medical School

Home > Find the Expert

By Concept By Last Name By Full Text

## Find the Expert

Click on the filters page to adjust the source of the information and/or the search terms. Selecting Community vs. Internal allows you to choose results from just this community, and adjusting "Experts based on..." allows you to choose from publications or other data sources. The additional concepts allow you to narrow these results.

Discover the top experts in your institution / country

### 26 Experts found

Internal

Community

	Publications	Grants	PubMed H-Index (?)
Koch, Alisa E Int Med-Rheumatology, Cancer Center	183	6	50
Ike, Robert W Int Med-Rheumatology	40	0	13
Myers, Jeffrey L Pathology Department	226	2	37
Schnitzer, Bertram Pathology Department, Cancer Center	139	0	22
Somers, Emily Catherine Int Med-Rheumatology	22	0	11
Carlos, Ruth C Radiology, Cancer Center	81	2	17
Chang, Alfred E General Surgery Section, Cancer Center	245	8	48
Clauw, Daniel J	158	8	29

### Experts based on...

Publications

### Your search terms

Sjogren's Syndrome

### Refine search by adding Concepts

#### Disorders

Interstitial Nephritis

Retinal Vasculitis

Cryptogenic Organizing Pneumonia

Amyloidosis

Rheumatoid Arthritis

Systemic Lupus Erythematosus

Esophageal Motility Disorders

add

add

add

add

add

add

add

Refine your search criteria

# What expertise do I have in my organization / country?

Find experts quickly and easily – search by concept, last name or full text

Get immediate access to an author's complete publication history

The screenshot shows the profile of Sharon J. Elliot, a faculty member at the School of Medicine, Surgery. The page is organized into several sections:

- Home:** A sidebar menu with options like Expert Overview, Profile, Publications, Grants, Similar Experts, Journals, Trends, Institutional Network, Coauthor Network, Research Network, and Additional Activities & CV.
- Profile:** Lists research interests such as Glomerular Mesangium, Mice, Kidney Glomerulus, Matrix Metalloproteinase 2, Extracellular Matrix, Estrogen Receptor beta, Focal Segmental Glomerulosclerosis, Inbred C57BL Mice, Estrogens, and Diabetic Nephropathies.
- Publications:** A list of three recent publications, including one from 2010 on estrogen receptor beta and another from 2009 on estrogen deficiency and tobacco smoke exposure.
- Similar Experts:** A table of related researchers with their publication counts.
- Journals:** A list of journals where the expert has published.
- Trends:** A graph titled "Explore the Research Trends" showing research activity over time.
- Research Network:** A section for exploring the expert's professional connections.

Establish new relationships by finding other experts in the same field or related disciplines

Home

By Concept By Last Name By Full Text

## Welcome to the Research Profiles!

In an effort to synergize inter-disciplinary clinical and translational research, Johns Hopkins University (JHU) is committed to using innovative research tools and information technologies to promote collaboration regardless of organizational affiliation or position within the bench-to-bedside-to-population spectrum of science.

This expertise portal is a key component of Johns Hopkins University (JHU)'s mission to catalyze the application of new knowledge and techniques to clinical practice at the front lines of patient care.



### Training Resources

SciVal Experts Training resources at the Welch Medical Library.

### New Community Features



Maximize your results and search in databases of other partners!

#### Home

Recent Publications

Most Frequent Journals

SciVal Experts Community

National Network

Profiling Overview

#### Experts

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

	Publications
Peter Abadir	9
Aida Abashawl	2
Fouad Abbas	13
Patricia Abbott	22
Fizan Abdullah	61
Darrell Abernethy	258
Marwan Abougergi	10
Ahmed Abusheh	4

#### Recent Publications [more >](#)

- Landman, BA; Asman, AJ; Scoggins, AG; Bogovic, JA; Stein, JA; Prince, JL

**Foibles, follies, and fusion: Web-based collaboration for medical image labeling.**

NeuroImage 2012;59(1):530-9.
- Calhoun, VD; Pearlson, GD

**A selective review of simulated driving studies: Combining naturalistic and hybrid paradigms, analysis approaches, and future directions.**

NeuroImage 2012;59(1):25-35.

Which grants shell  
we apply for?

Opportunities |  Awarded Grants |  Sponsors

## Browse opportunities

### Refine search results

#### Sponsor country

- Europe (2543)
- United Kingdom (2543)
- Germany (230)
- France (189)
- Italy (85)
- Ireland (78)
- Belgium (69)
- Switzerland (68)
- Netherlands (36)
- Sweden (25)
- Denmark (19)
- Luxembourg (19)
- Austria (14)
- Poland (8)
- Russian Federation (7)
- Latvia (3)
- Iceland (3)
- Spain (3)
- Greece (2)
- Czech Republic (2)

You searched for: Sponsor Country(Austria, Belgium, Switzerland, Czech Republic, Germany, Denmark, Spain, Estonia, France, United Kingdom, Greece, Ireland, Iceland, Italy, Luxem...

**Opportunities (3,404)** | [Awarded grants \(266,055\)](#) | [Inactive opportunities \(3,055\)](#) [Modify search](#)

20 results per page | 1 to 20 of 3404

	Deadline	Title	Sponsor	Type	Amount	Currency
<input type="checkbox"/> 1.	30-JUN-2015	Growing Community Assets	Big Lottery Fund	Community Service Grants	1,000,000	GBP
<input type="checkbox"/> 2.	30-JUN-2015	Investing in Communities	Big Lottery Fund	Community Service Grants	1,000,000	GBP
<input type="checkbox"/> 3.	30-JUN-2015	Supporting 21st Century Life	Big Lottery Fund	Program Project/ Center Grants	1,000,000	GBP
<input type="checkbox"/> 4.	30-JUN-2015	Life Transitions	Big Lottery Fund	Research Grants	Not Available	N/A
<input type="checkbox"/> 5.	31-DEC-2014	Call for experts	European and Developing Countries Clinical Trials Partnership	Program Project/ Center Grants	Not Available	N/A
<input type="checkbox"/> 6.	30-JUN-2014	Economist Visitors Programme to support the work of the Competitiveness Report (2011-2014)	European Commission	Program Project/ Center Grants	Not Available	N/A
<input type="checkbox"/> 7.	31-MAR-2014	2014 Communities	Big Lottery Fund	Community Service Grants	2,000	GBP
<input type="checkbox"/> 8.	31-MAR-2014	International Communities	Big Lottery Fund	Program Project/ Center Grants	500,000	GBP

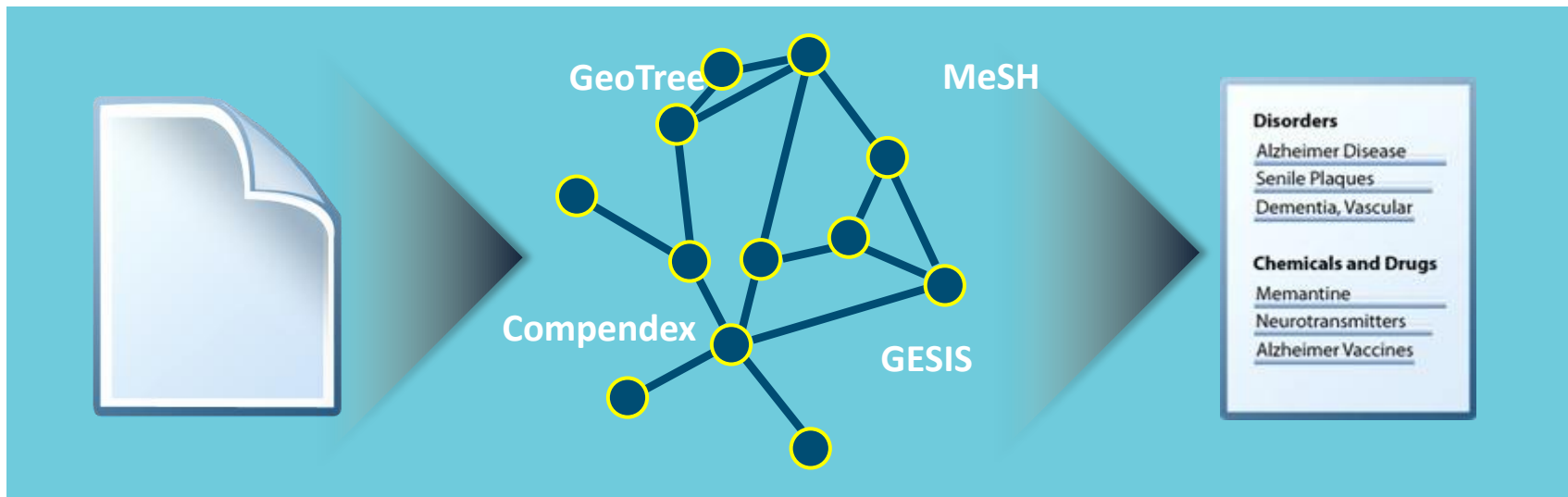
# THANK YOU!

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# How does the Elsevier Fingerprint Engine work?



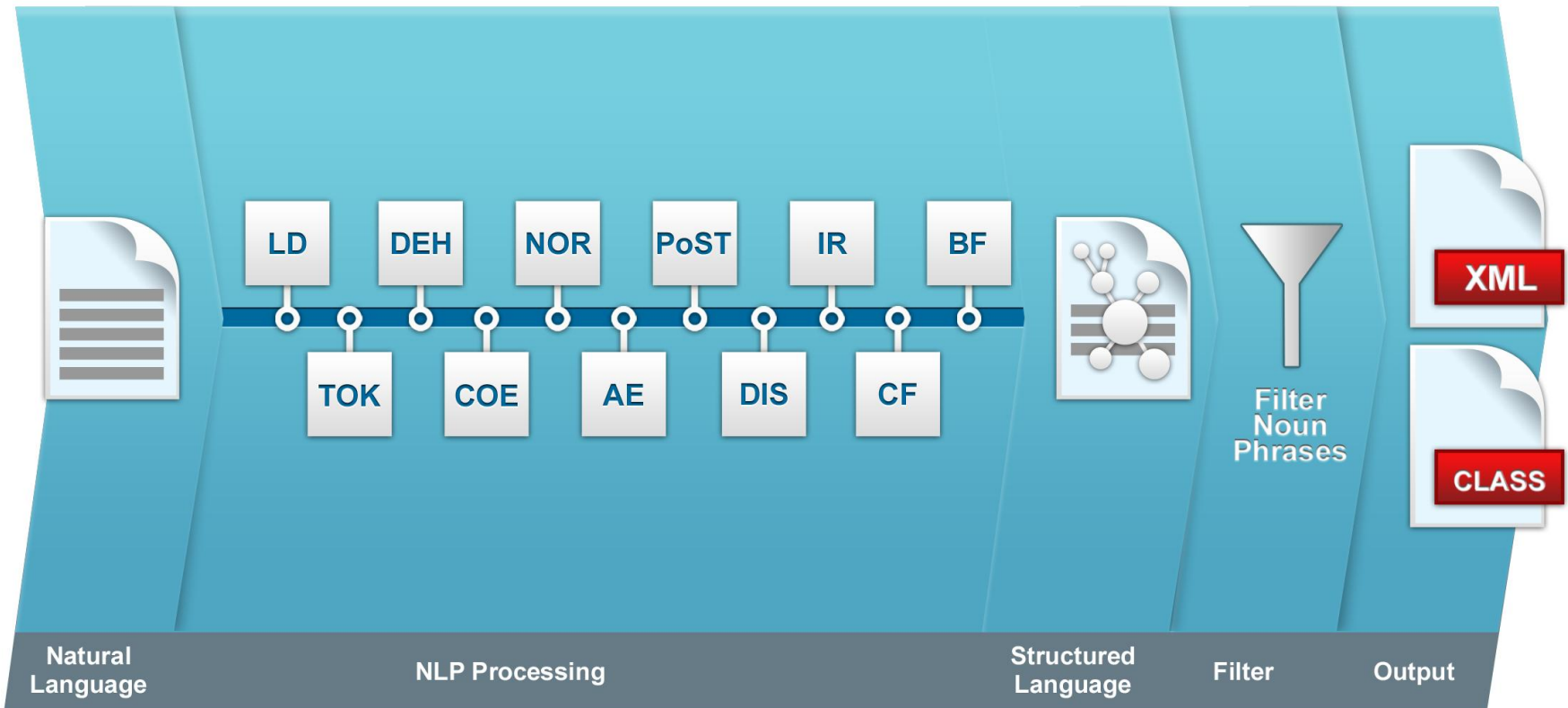
Source Text

Thesauri

Fingerprint



# Natural Language Processing modules we apply to interpret text



Workflow: Concept Look-Up