How to facilitate your research with Scopus & Scival

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Scopus & Scival

Content

- Scopus Overview
- Strengths of Scopus
- How to use Scopus to facilitate your research
  - Information gathering for research topics and proposal
  - Research progress tracking
- Conclusion

Scopus is ?

ELSEVIER

Scientific, technical and medical information and solutions provider

Science & Technology

Research Intelligence

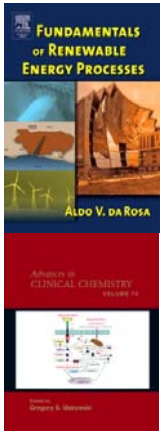
Scopus

SciVal

Pure

etc.

E-book



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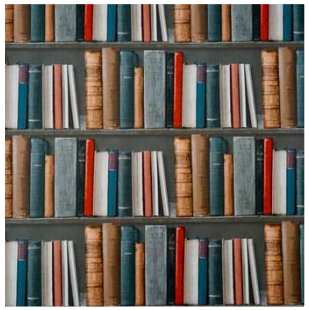
- Launched in 2004.
- World largest abstract and citation database of peer-reviewed literature, and features smart tools that allow you to track, analyze and visualize scholarly research.
- Record can be traced back as early as 1788.

Scopus®

- Update on a daily basis.
- Provide data & technics for Rankings like QS, THE, Shanghai Ranking etc..

Abstract and citation database is ?



A standard database created according to literatures and their references which are the information object. Does not directly provide full-text reading (depending on subscription of the institution)

Search literatures and understand researchers' work progress, historical origin of a research topic as well as the latest development related to certain disciplines via citation relationship

An effective scientific research management and statistical analysis tool to obtain various types of statistical data such as institutions, disciplines, scholars and journals.

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Comparison of NMR structural and dynamics features of the urea and guanidine-denatured states of GED

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ABSTRACT

Denatured states of proteins, the starting points as well as the intermediates of folding in vivo, play important roles in biological function. In this context, we describe here urea unfolding and characterization of the denatured state of GTPase effector domain (GED) of dynamin created by 9.7 M urea. These are compared with similar data for guanidine induced denaturation reported earlier. The unfolding characteristics in the two cases, as measured by the optical probes, are significantly different, urea unfolding proceeding via an intermediate. The structural and motional characteristics, determined by NMR, of the two denatured states are also strikingly different. The urea-denatured state shows a combination of α- and β-preferences in contrast to the entirely β-preferences in the guanidine-denatured state. Higher ^{15}N transverse relaxation rates suggest higher folding propensities in the urea-denatured state. The implications of these to GED folding are discussed.

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Denatured states of proteins are beginning to be recognized as important entities in the biological world—a denatured state of a protein is defined as the lowest energy 'non-native' state under a given set of conditions [1]. Inside a living cell, the environmental conditions like local intracellular ion concentrations, interaction with various ligands etc. can vary significantly from organelle to organelle [2], and even within the same organelle there can be variations due to signaling processes and interactions with different molecules. All these processes tightly regulate the translational and post-translational processes which decide the fate of the newly synthesized polypeptide chain. Thus a particular protein may see different environments which lead to different denatured states during the course of its function. Some of the denatured states may lead to soluble aggregates, which occasionally lead to diseases [3].

When a polypeptide chain begins to fold starting from a denatured ensemble, each molecule in the ensemble can, in-principle, fold along a different path. In this scenario, the starting state in terms of the conformational preferences across the polypeptide chain will have a significant influence on the path the molecule adopts; different denaturing environments inside a cell can create different initial states for the protein to fold from. If the chain already has some structure, that may form the nucleus for additional structure to build upon, and this will reduce the search options for the polypeptide chain in the multi-dimensional conformational space. It can also happen that the existing structure may have to be removed for a new structure to get formed for the protein to move towards the native state. Thus the number of folding paths for a given protein would be dictated by the number and nature of structural preferences across the length of the chain.

In view of all these, it is important to understand the characteristics of the various denatured states, with regard to their topologies, heterogeneities and motional characteristics, their modulations due to changes in environmental conditions, etc. at atomic level detail. *In vitro*, different denatured states can be created by use of different denaturants, such as, Gdn-HCl, urea, SDS, extreme pH conditions, etc. Although these may not exactly represent the denatured states, *in vivo*, they help sample the ensemble quite widely and thus allow investigation of the folding processes, in general.

In this background we present here a comparative study of the structural and dynamics characteristics of urea-denatured and Gdn-HCl-denatured states of the GTPase effector domain (GED)[2] of dynamin, a crucial protein in clathrin mediated endocytosis. GED plays important roles both in dynamin assembly around the neck of the clathrin coated vesicles, and assists the N-terminal GTPase domain in GTP hydrolysis required for dynamin function [4,5]. The recombinant form of GED has been shown to self-assemble and form large megadalton-sized oligomers *in vitro* [6,7] even at micro-molar concentrations. We first describe the global characteristics of urea-mediated unfolding of GED, as studied by optical techniques including CD and fluorescence and then the residue-level details about the perturbations caused by 9.7 M urea using NMR and finally compare the urea-mediated unfolding with that using Gdn-HCl. Gdn-HCl is highly charged as compared to urea which is neutral and this is expected to have an influence on the unfolding mediated by the two denaturants; the former may lead to more collapsed state due to electrostatic screening. Our data reveal that the unfolding mechanisms by the two denaturants are indeed different. Whereas Gdn-HCl unfolding is two-state [8], urea-mediated unfolding is more complex and hence the structural and dynamics characteristics of the denatured states created by the two are different. These provide clues about the differences in the potential folding initiation sites for the folding that may follow on dilution of the denaturants. This study will form the basis for a detailed elucidation of the urea dilution driven self-association pathway of the protein, along the same lines as has been recently demonstrated in the case of self-association driven by guanidine dilution [7]. Consequently, the variability in the assembly details—high resolution picture of which is still unknown—if any, can be unraveled.

Fluorescence measurements

Bis-ANS [4,4′-Bis(1-anilinonaphthalene 8-sulfonate) Molecular Probes, OR, USA] was prepared and the concentration was determined using the extinction coefficient, $\varepsilon_{360} = 23{,}000\ cm^{-1}\ M^{-1}$. Steady-state fluorescence emission spectra were recorded with $\lambda_{exc} = 395$ nm on a Spex Fluorolog-dM300F spectrofluorimeter at 27 °C using a 1 cm path length cuvette with a band pass of 1.5 nm for both excitation and emission. The emission spectra were measured from 450 to 550 nm at a scan rate of $1\ nm\ s^{-1}$. The denaturation profiles of 10 μM protein in Tris buffer (20 mM, pH 7.4), pre-equilibrated with varying concentration of the denaturant and bis-ANS (4 μM) for 12 h, were measured by monitoring the emission at 491 nm. The data were smoothened by three-point averaging to minimize errors due to denaturant concentration adjustments and were normalized using the following equation [10]:

$$F_{app} = \frac{S_F - S_{obs}}{S_F - S_U} \quad (2)$$

References

[20] P.L. Privalov, Adv. Protein Chem. 33 (1979) 167–241.
[21] F. Rashid, S. Sharma, B. Rao, Protein J. 24 (2005) 283–292.
[22] J.K. Kamal, M. Nazeennnisa, D.V. Behere, J. Biol. Chem. 277 (2002) 40717–40721.
[23] J.K. Kamal, D.V. Behere, Biochemistry 41 (2002) 9034–9042.
[24] H.S. Pappa, A.E. Cass, Eur. J. Biochem. 212 (1993) 227–235.
[25] N. Shukla, A.N. Bhatt, A. Alverti, C. Zanetti, V. Bhakuni, FEBS J. 272 (2005) 2216–2224.
[26] K. Boren, H. Grankvist, P. Hammarstrom, U. Carlsson, FEBS Lett. 566 (2004) 95–99.
[27] M.S. Akhtar, A. Ahmad, V. Bhakuni, Biochemistry 41 (2002) 3819–3827.
[28] J. Chugh, S. Sharma, D. Kumar, R.V. Hosur, Biomol. NMR Assignments, (2008), doi:10.1007/s12104-008-9129-1.
[29] H.J. Dyson, P.E. Wright, Nat. Struct. Biol. 5 (Suppl.) (1998) 499–503.
[30] H.J. Dyson, P.E. Wright, Methods Enzymol. 339 (2001) 258–270.
[31] H.J. Dyson, P.E. Wright, Adv. Protein Chem. 62 (2002) 311–340.
[32] H.J. Dyson, P.E. Wright, Chem. Rev. 104 (2004) 3607–3622.
[33] S. Schwarzinger, G.J. Kroon, T.R. Foss, P.E. Wright, H.J. Dyson, J. Biomol. NMR 18 (2000) 43–48.
[34] S. Schwarzinger, G.J. Kroon, T.R. Foss, J. Chung, P.E. Wright, H.J. Dyson, J. Am. Chem. Soc. 123 (2001) 2970–2978.
[35] C.J. Penkett, C. Redfield, I. Dodd, J. Hubbard, D.L. McKay, D.E. Mossakowska, R.A. Smith, C.M. Dobson, L.J. Smith, J. Mol. Biol. 274 (1997) 152–159.
[36] J. Klein-Seetharaman, M. Oikawa, S.B. Grimshaw, J. Wirmer, E. Duchardt, T. Ueda, T. Imoto, L.J. Smith, C.M. Dobson, H. Schwalbe, Science 295 (2002) 1719–1722.
[37] C.S. Le Duff, S.B. Whittaker, S.E. Radford, G.R. Moore, J. Mol. Biol. 364 (2006) 824–835.
[38] E.R. McCarney, J.E. Kohn, K.W. Plaxco, Crit. Rev. Biochem. Mol. Biol. 40 (2005) 181–189.
[39] S. Schwarzinger, P.E. Wright, H.J. Dyson, Biochemistry 41 (2002) 12681–12686.
[40] T.L. James, H. Liu, N.B. Ulyanov, S. Farr-Jones, H. Zhang, D.G. Donne, K. Kaneko, D. Groth, I. Mehlhorn, S.B. Prusiner, F.E. Cohen, Proc. Natl. Acad. Sci. USA 94 (1997) 10086–10091.
[41] K. Tozawa, C.J. Macdonald, C.N. Penfold, R. James, C. Kleanthous, N.J. Clayden, G.R. Moore, Biochemistry 44 (2005) 11496–11507.
[42] J. Kyte, R.F. Doolittle, J. Mol. Biol. 157 (1982) 105–132.

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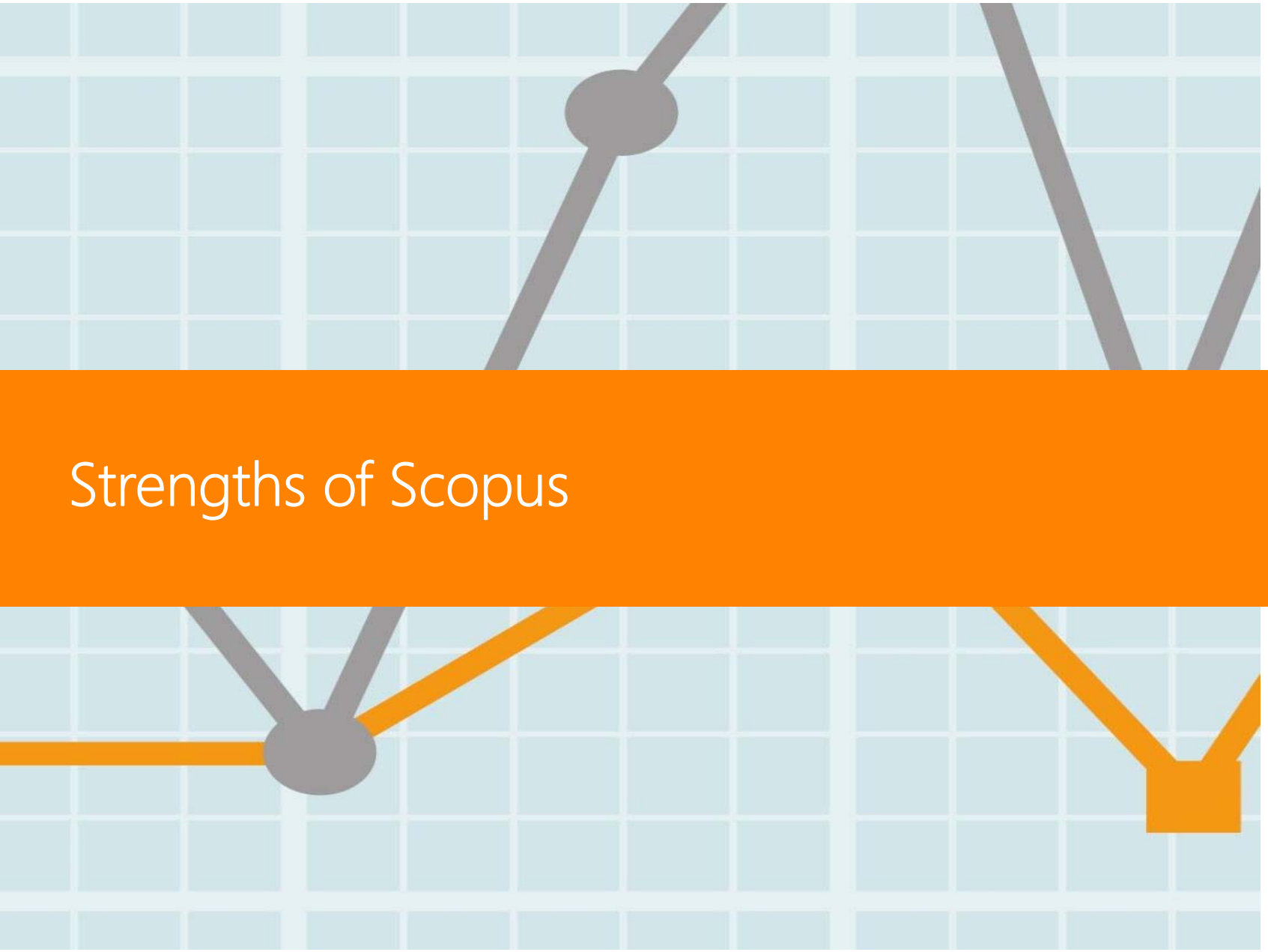
Strengths of Scopus



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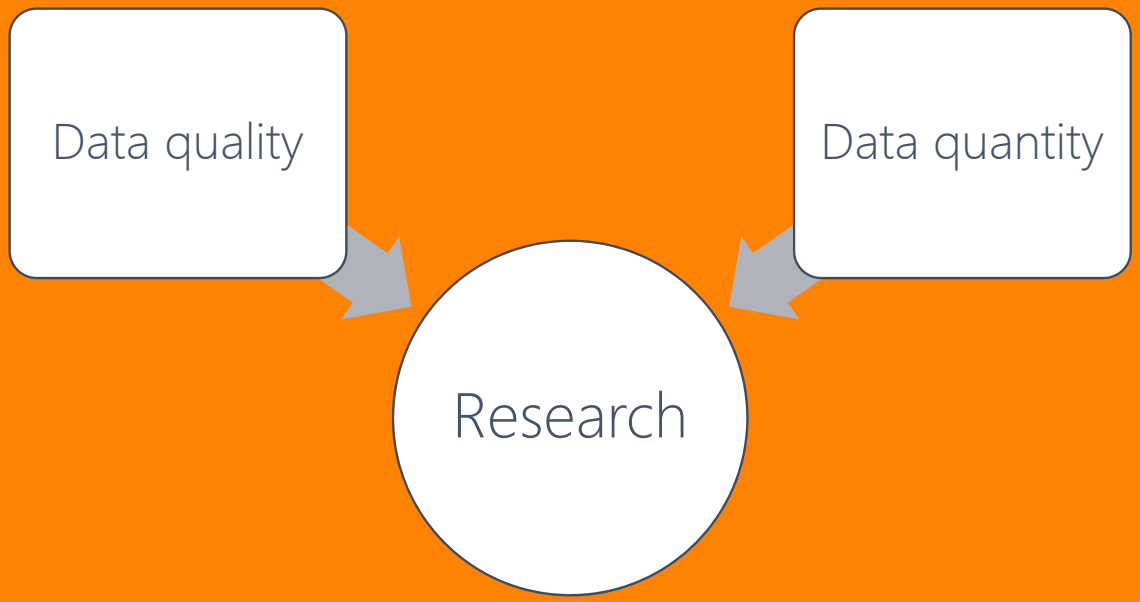
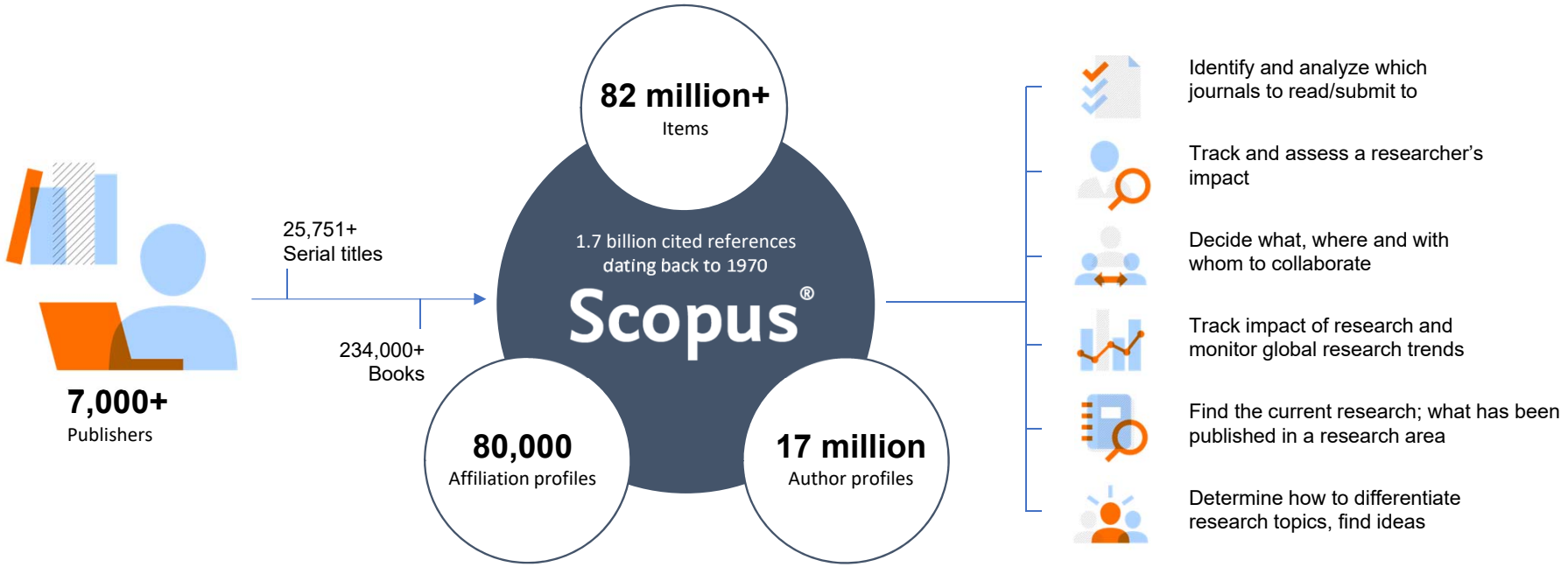

Data quality
Data quantity
Research

Scopus-Data quantity



World largest abstract and citation database of peer-reviewed literature

Scopus-Data quantity

- 7,000+ publishers
- 105 different countries
- 40 different languages covered- 860 Journals from China
- Multiple regional content types covered (journals, conferences, books, book series)
- Updated daily

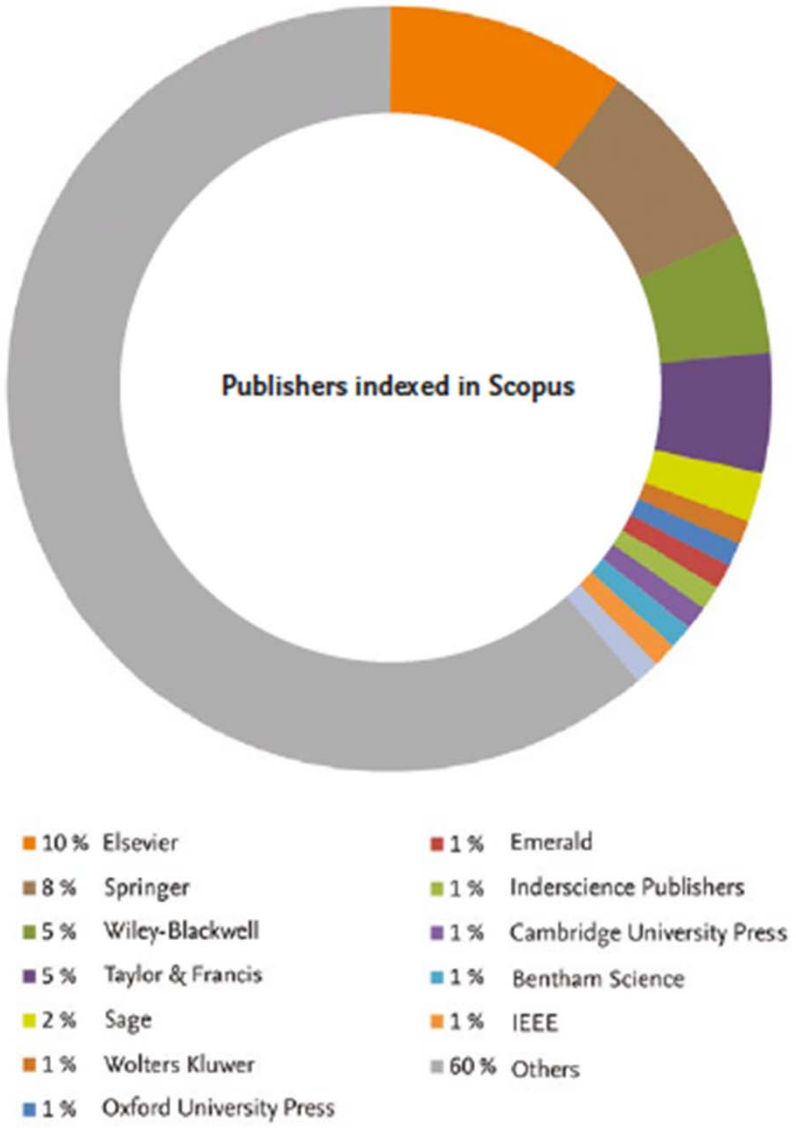
✓ 44 million+ patent records from five patent offices

Number of journals by subject area**	Journals	Conferences	Books	Patents
Physical sciences 8,529	**24,610**** active peer-reviewed journals	**101K** conference events	**63.3K** individual book series volumes	**46.0M** patents
Health sciences 7,136	**292** trade journals	**10.47M** conference papers	**234K** stand-alone books	5 major patent offices:
Social sciences 10,574	**6,324** Gold OA Journals (DOAJ/ROAD)	Mainly Engineering and Computer Sciences	**1.95M** total book items	• WIPO • EPO • USPTO • JPO • UK IPO
Life sciences 4,915	**14.1M** fully-indexed funding acknowledgements		Focus on Social Sciences and A&H	
	677K preprints			
	• Full metadata, abstracts and cited references (refs post-1970 only)			
	• Citations back to 1970			

*Journals may be classified in multiple subject areas: this count includes current actively indexed titles only
**Total number of Scopus journals in database including inactive titles is 40,804

Scopus-Data quantity

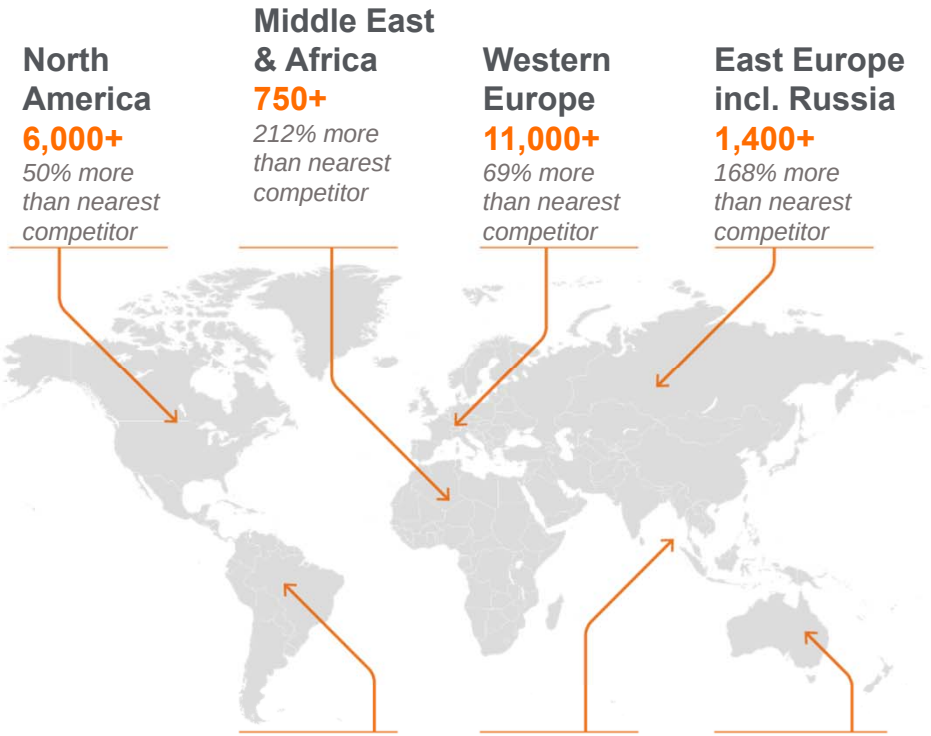
- Unbiased, comprehensive journal coverage with titles from many reputable scholarly publishers.
- Around 10% from Elsevier



Source: Scopus title list (*Counts Jan. 2020)

Content coverage across different regions

Global Representation
(number of titles)



Content Selection & Advisory Board (CSAB)

Expert Curation

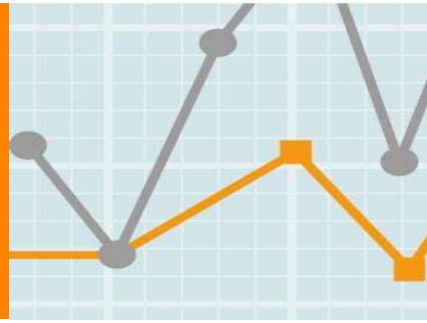
There are 100,750* active scholarly titles > Of which 43,947* are peer-reviewed > **Scopus** indexes 22,800+ > Curated content

› Titles on Scopus are rigorously reviewed and selected by an independent board of subject matter experts to include 52% of the world's peer-reviewed scholarly literature.

** Source: Ulrich's Web Global Serials Directory, August 1, 2017*

- The CSAB is an independent board of subject experts from all over the world.
- Comprised of 17 Subject Chairs.
- Board members are chosen for their expertise in specific subject areas; many have (journal) Editor experience.

How to use Scopus to facilitate your research



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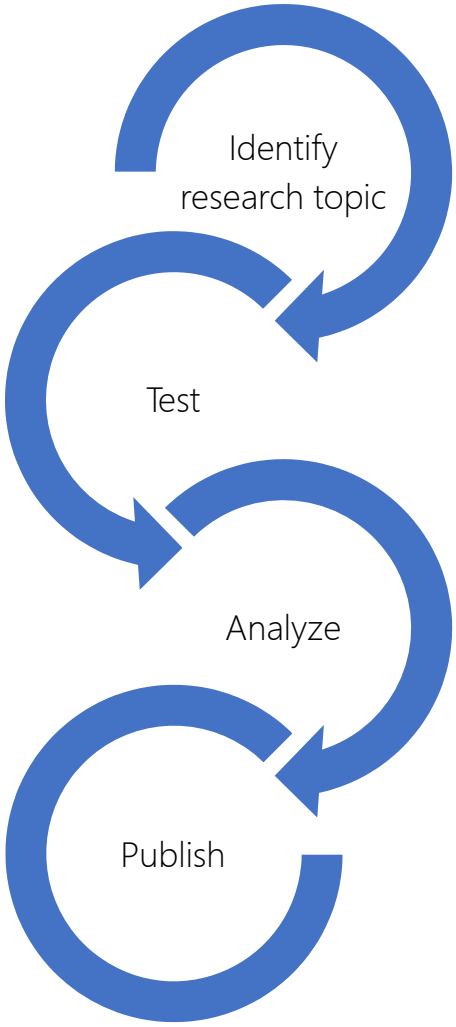
Basic workflow of research



- ✓ Understand and analyze current research achievements
- ✓ Discover problems
- ✓ Propose hypothesis

Scopus®

- Topic selection & thesis proposal

- ✓ Determine test protocols and procedures
- ✓ Test
- ✓ Collect data
- ✓ Validate data
- ✓ Adjust protocol and procedures
- ✓ Verify our hypothesis
- ✓ Visualize data

- Test adjustment based on indexed articles
- Latest research progress tracking

- ✓ Write research papers
- ✓ Publish papers

- Journal identification for article publishing
- Reviewer recommendation (differ by journals)

Efficient Topic selection & thesis proposal using Scopus

Quickly understand research history & background, obtain cutting-edge research development information

- Newest literatures
- Important journals
- Literature research result analysis
- Literature reviews
- Literatures with high impact
- Hot literatures
- Context for a certain research topic

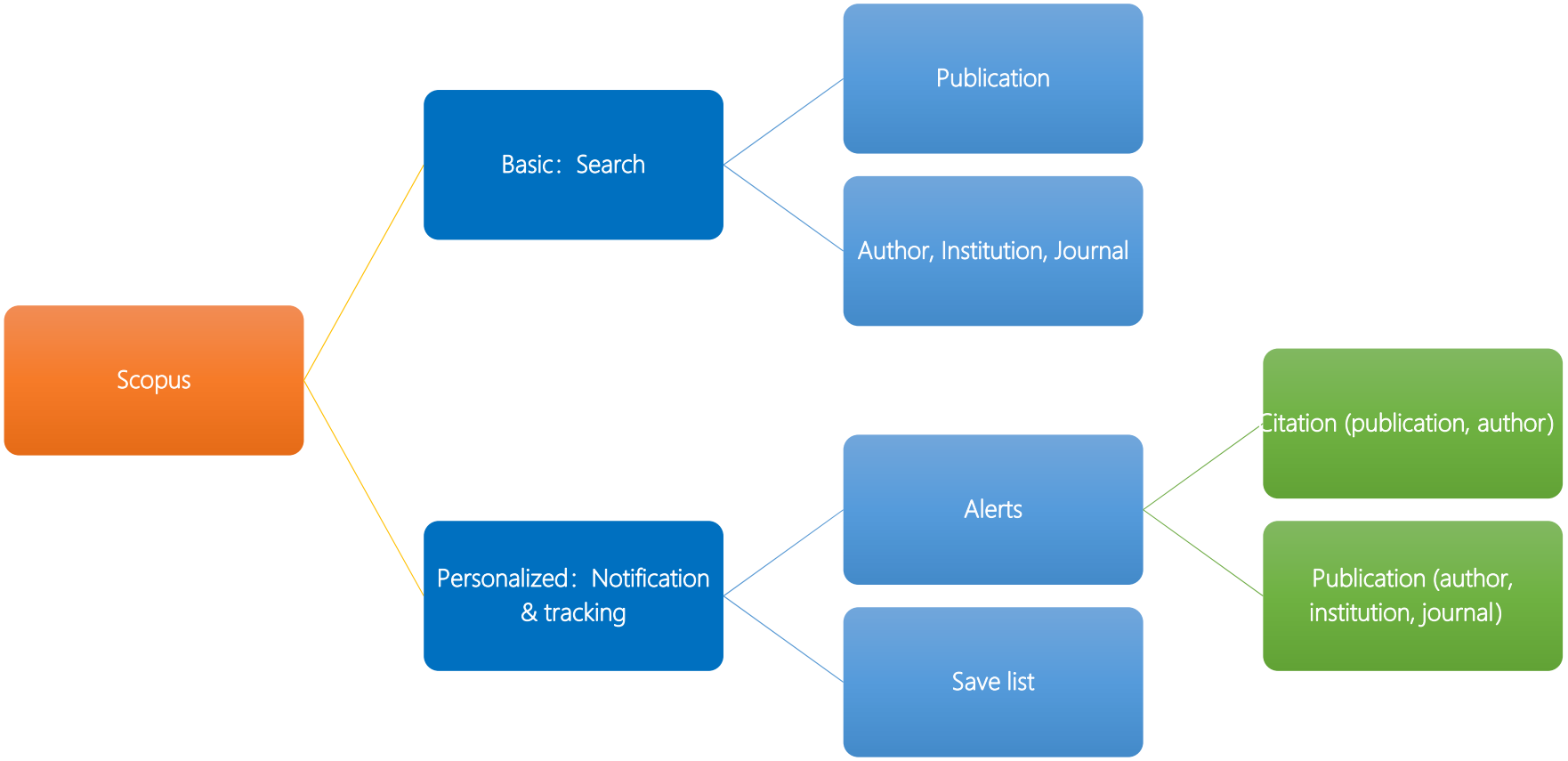
→ Get cutting-edge research work

→ Get research background information

→ Identify important publication

→ Track the literature

Scopus feature overview



Scopus-Search functions

Search

Sources

Scopus-Search functions

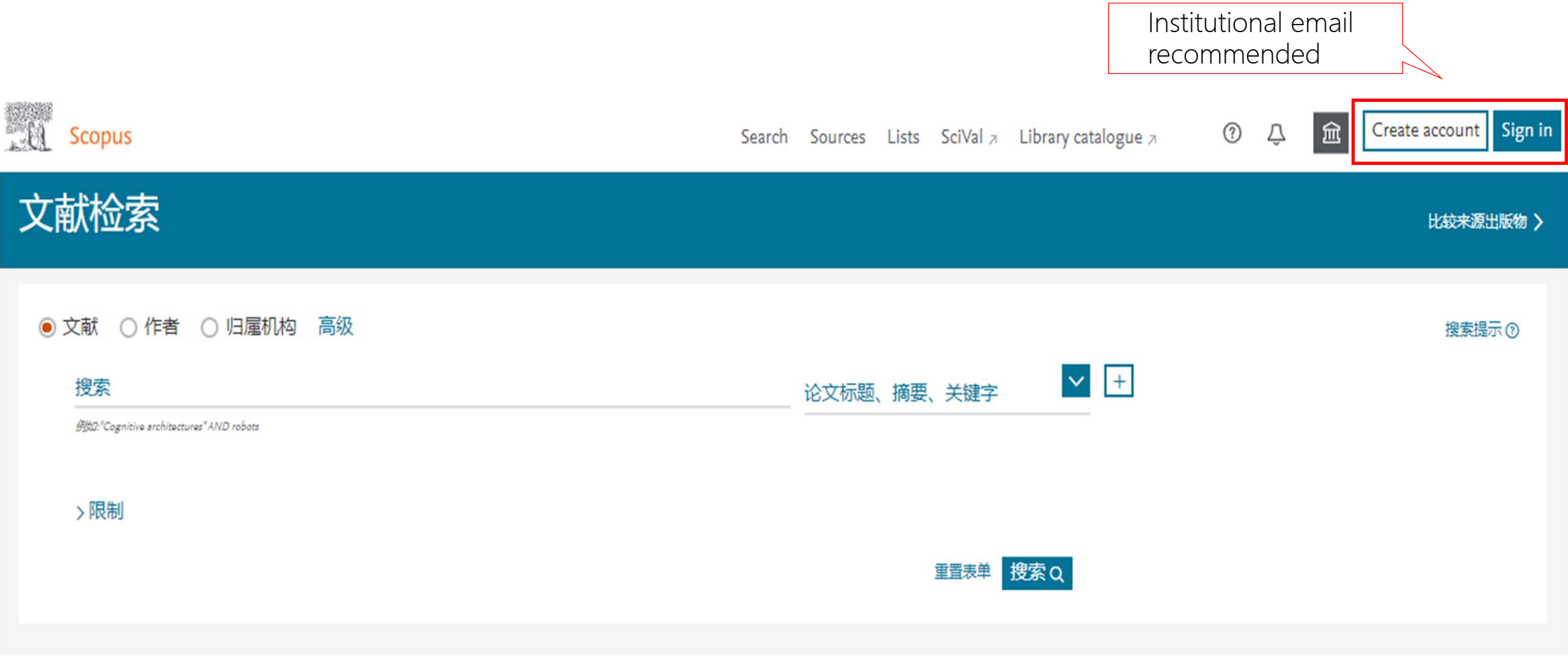
Documents

Authors

Affiliations

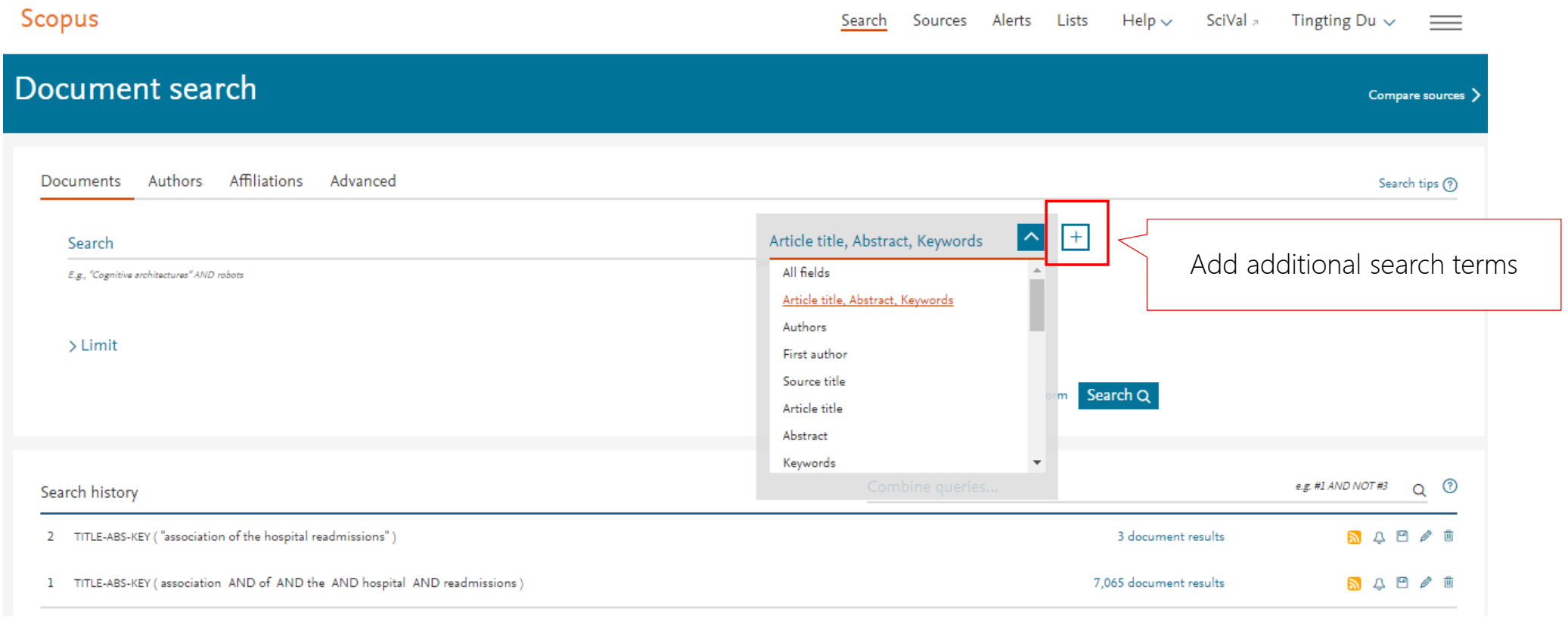
Advanced

Registration and login before using personalized feature



Search – Document search (Recommended)

Simple to use: Pre-defined search scope



Scopus Search Strategies

The most widely used online searching strategy

The “building blocks” approach

Content based on Scopus Search Strategies by Dr. Eric Sieverts & Arthur Eger MSc

Scopus Search Strategies-Search operators and retrieval rules

AND	Results to include all terms and terms may be far apart.
OR	Results must include one or more of the terms
And not	To exclude specific terms
Wildcards "?"	Replace one letter in a search term. e.g. "Transplant?" returns results containing "Transplants"
Wildcards "*"	Replace any letter in a search term. e.g. "transplant*" returns results containing "transplant, transplanted, transplanting…."
""	Loose/approximate phrases search. e.g. "heart attack" searches for documents where heart attack appear together in the title, abstract, or keywords.
{}	Exact phrases search. e.g. {health care?} returns results such as: Who pays for health care?

Scopus Search Strategies

General starting points, whatever strategy you choose:

– Think before you type

– Make some conceptual analysis:

1. write your problem down in a sentence
2. what words represent the constituting elements for your subject?
3. which element is most vital?

– think about some proper search terms (other than those words jotted down already)

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Scopus Search Strategies

The “building blocks” approach

- Determine the main elements or concepts associated with your problem (in somewhat more detail than before)
- Write characteristic words for them, next to each other
- Think of synonyms or alternatives for these words
- Write these words under the corresponding concept

Sample: Find articles on modern town planning in The Netherlands:

Town planning	Modern	Netherlands
Town planning	Modern	Netherlands
Urban planning	Contemporary	Holland
Urban design	Current	Dutch
City planning	20th century	Amsterdam
	Twentieth century	Rotterdam

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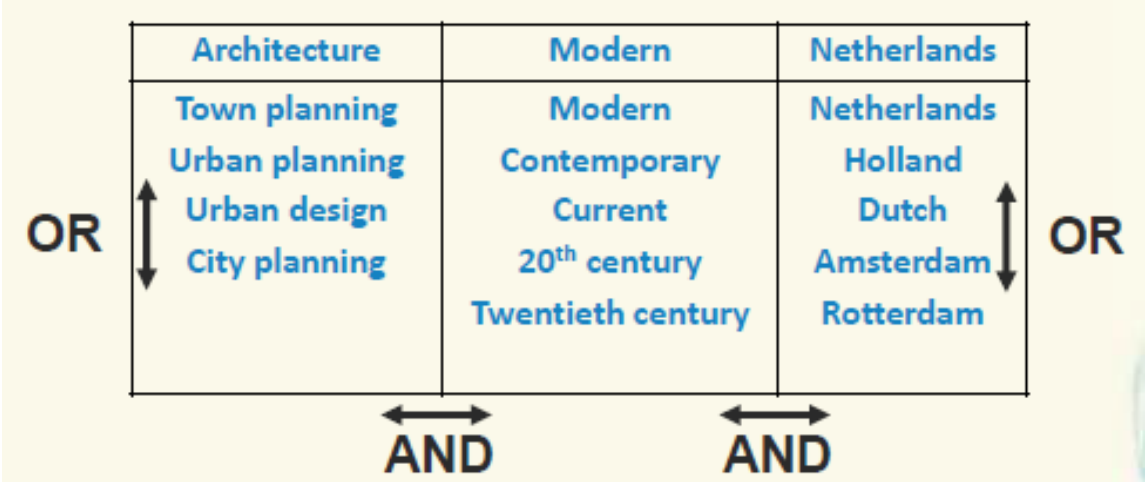
Scopus Search Strategies



- Formulate queries based on the elements or concept groups, “OR” synonyms
- Retrieve individual result sets for each element or concept group
- Combine systematically retrieved sets with Boolean operators (mostly AND) to build a solution set for the whole problem

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Scopus Search Strategies

- Retrieve individual result sets and combine

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Practice

"building blocks"

Quiz

Enter: "toxi*"

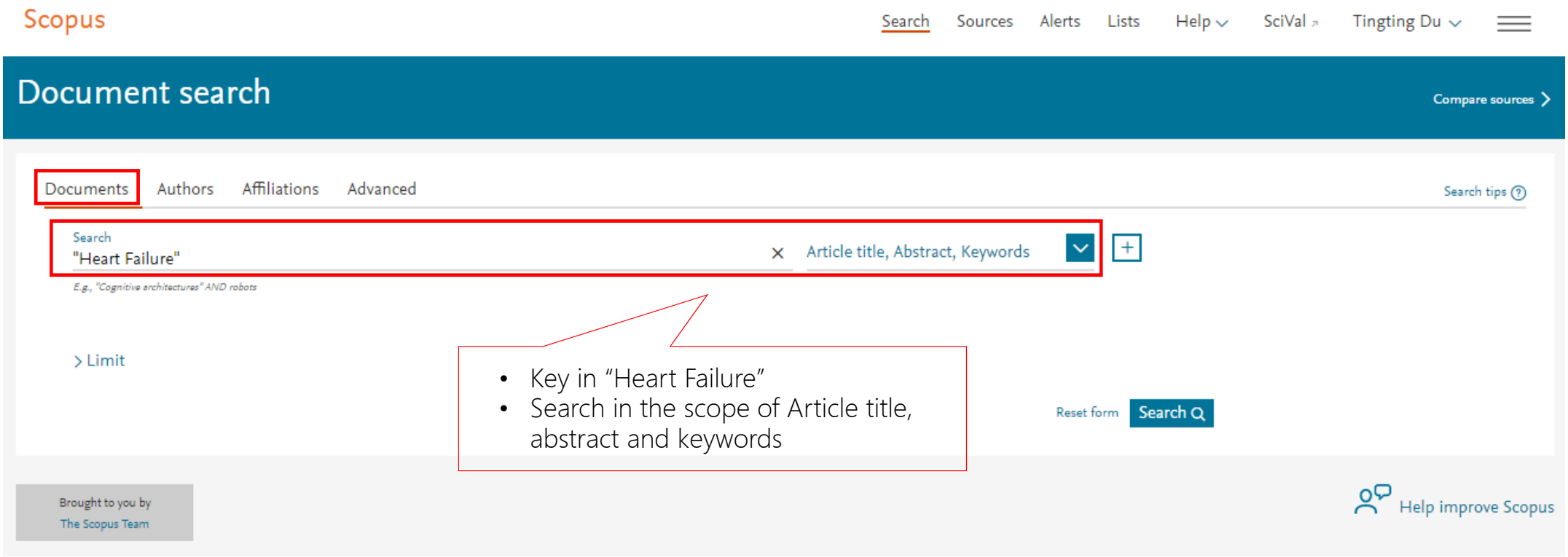
The Result will be… Toxin ,toxic , toxicity, toxicology

Case study

Research topic : Heart Failure

Topic selection & thesis proposal

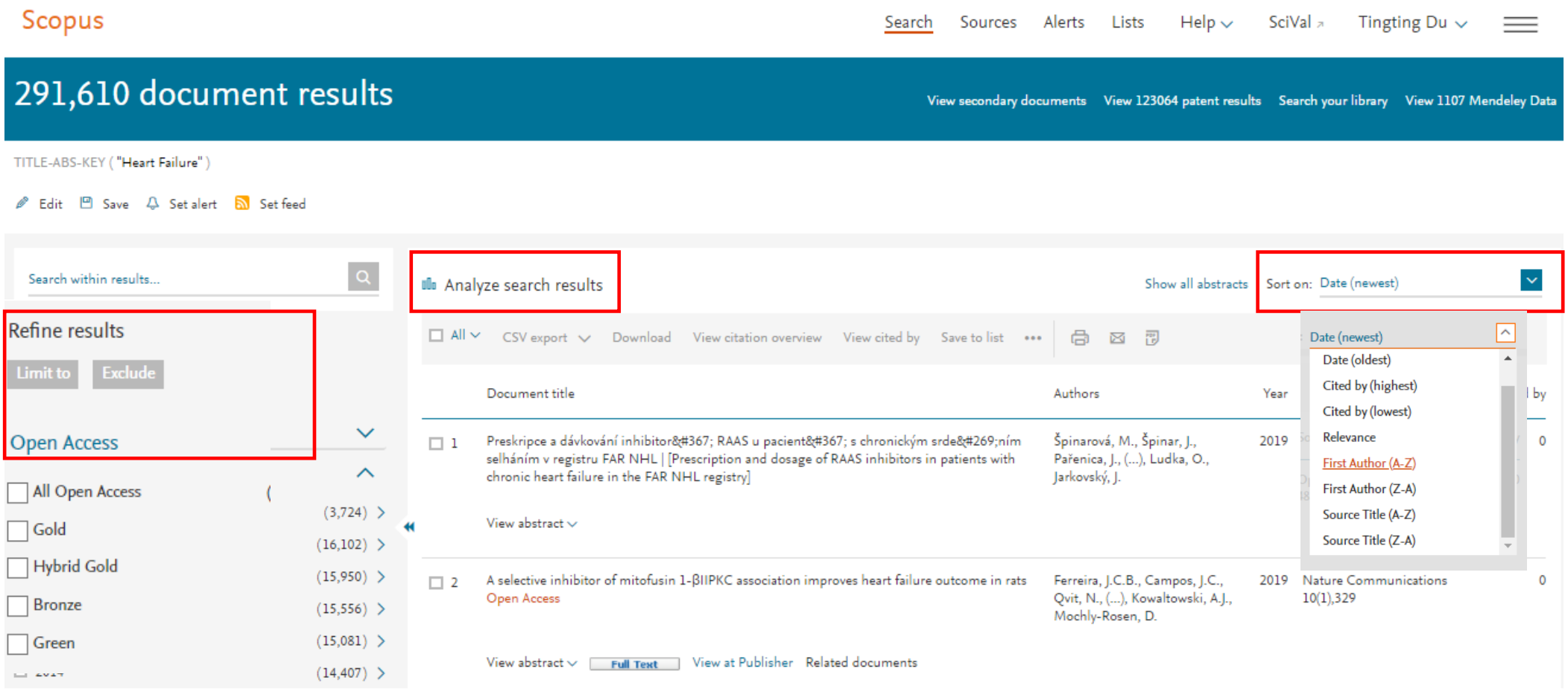
More results with initial search and then narrow down



- Key in "Heart Failure"
- Search in the scope of Article title, abstract and keywords

Topic selection & thesis proposal

Main functions to use



Topic selection & thesis proposal

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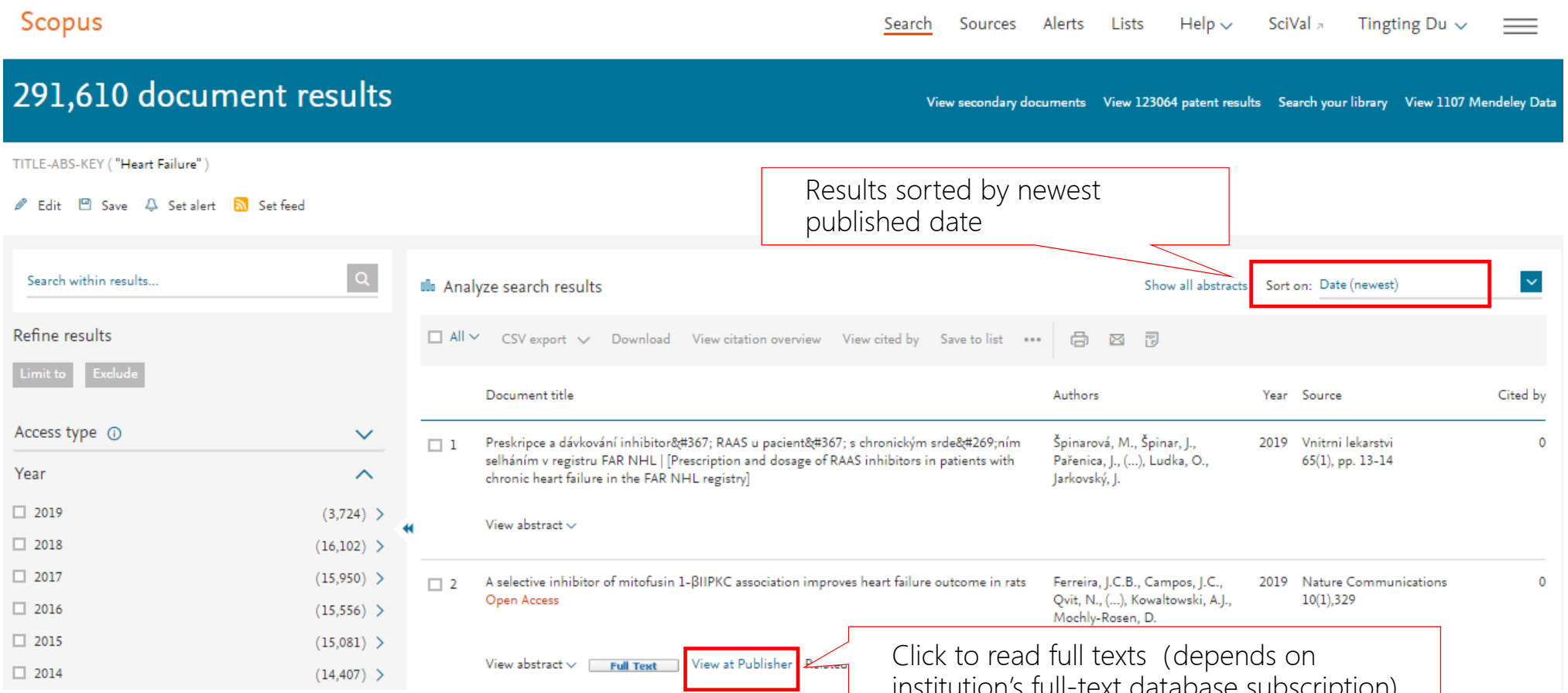

Topic selection & thesis proposal

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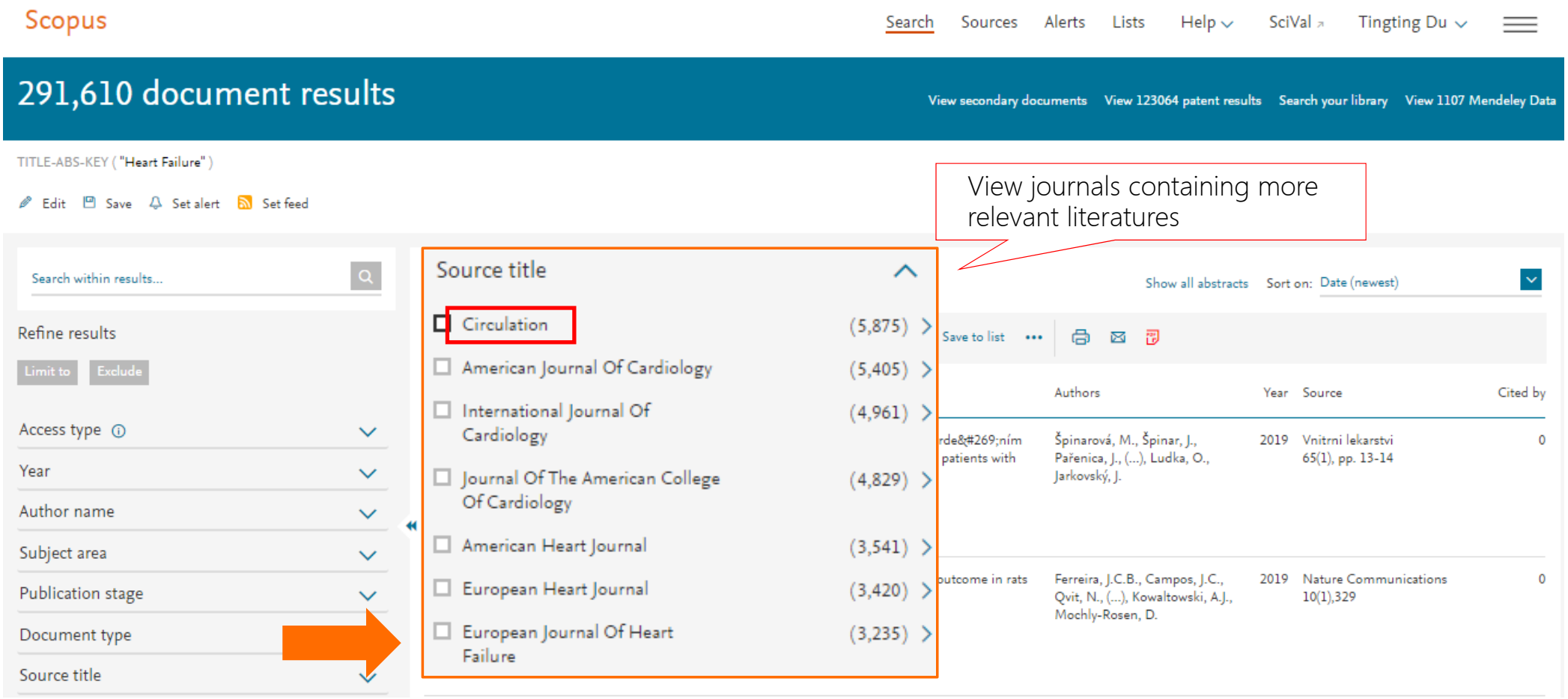

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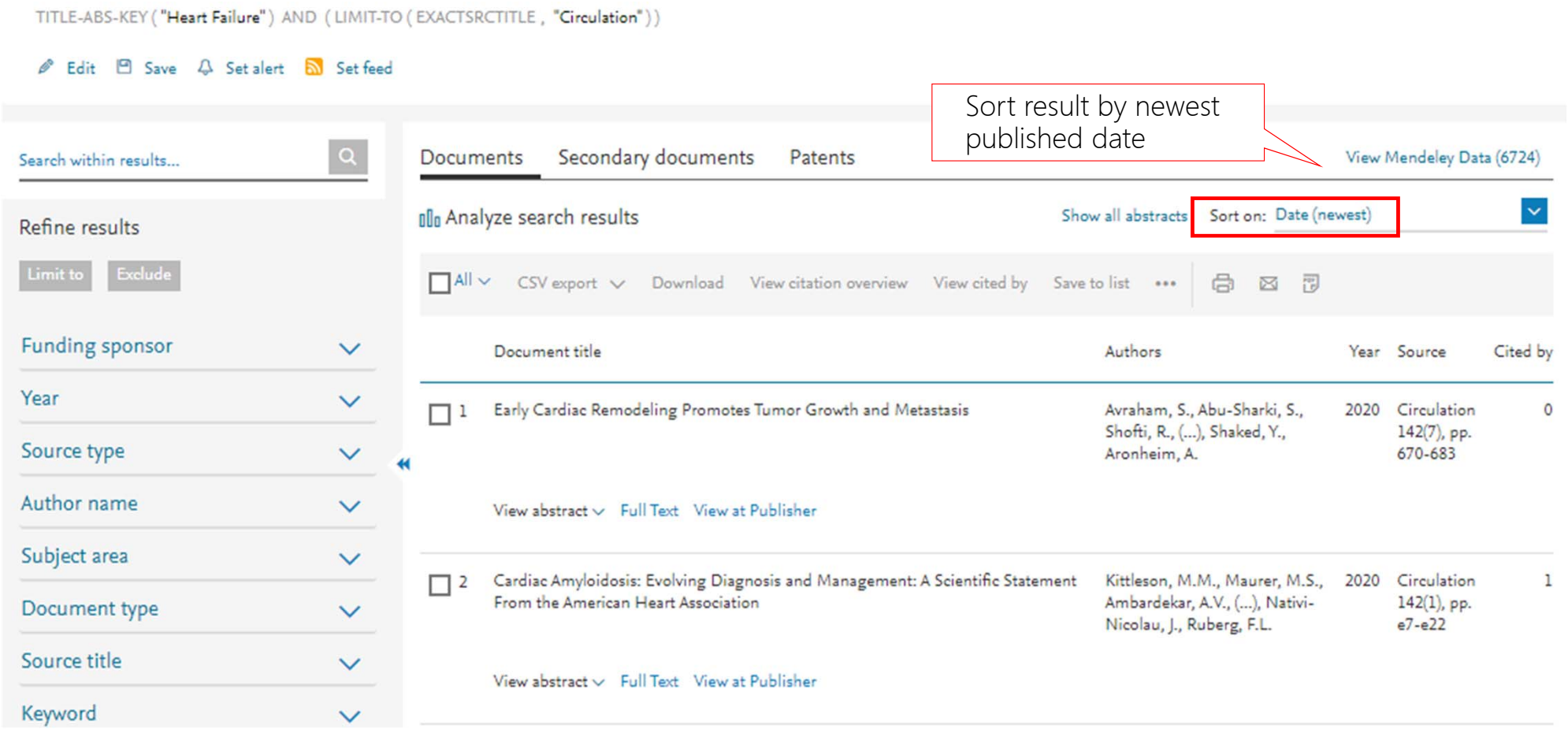

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- Funding sponsor
- Year
- Source type
- Author name
- Subject area
- Document type
- Source title
- Keyword
- Publication stage
- Affiliation

Narrow down results by keywords, country, etc.

Filter by keyword

Male	(17,308)	Therapy	(2,534)	Heart Atrium Fibrillation	(1,496)
Female	(14,909)	Animal	(2,508)	Thrombosis	(1,495)
Adult	(13,421)	Cardiovascular Risk	(2,470)	Protein Expression	(1,493)
Controlled Study	(10,901)	Follow-Up Studies	(2,431)	Cardiovascular System	(1,478)
Major Clinical Study	(10,202)	Editorial	(2,426)	Drug Efficacy	(1,466)
Aged	(9,157)	Hemodynamics	(2,404)	Angina Pectoris	(1,456)
Nonhuman	(7,643)	Heart Muscle Ischemia	(2,363)	Blood	(1,446)
Middle Aged	(6,463)	Adolescent	(2,316)	Congestive Heart Failure	(1,438)
Heart	(5,972)	Prognosis	(2,308)	Inflammation	(1,435)
Heart Infarction	(5,536)	Cardiovascular Diseases	(2,275)	Coronary Artery Blood Flow	(1,432)
Animal Experiment	(5,226)	Note	(2,213)	Genetics	(1,416)
Animals	(4,339)	Heart Catheterization	(2,140)	Electrocardiogram	(1,400)
Clinical Article	(4,307)	Heart Rate	(2,113)	Human Tissue	(1,391)
Myocardial Infarction	(4,109)	Editorials	(2,093)	Heart Muscle	(1,345)
Heart Failure	(4,084)	Unclassified Drug	(2,062)	Dipeptidyl Carboxypeptidase Inhibitor	(1,326)
Electrocardiography	(4,034)	Child	(2,054)		
Coronary Artery Disease	(3,951)	Drug Effect	(2,024)	Acute Heart Infarction	(1,311)
Treatment Outcome	(3,815)	Risk Assessment	(2,003)	Epidemiology	(1,310)
Mortality	(3,808)	United States	(1,999)	Nuclear Magnetic Resonance Imaging	(1,310)
Animal Model	(3,749)	Myocardium	(1,996)		
Clinical Trial	(3,693)	Randomized Controlled Trial	(1,945)	Prospective Studies	(1,303)

Topic selection & thesis proposal

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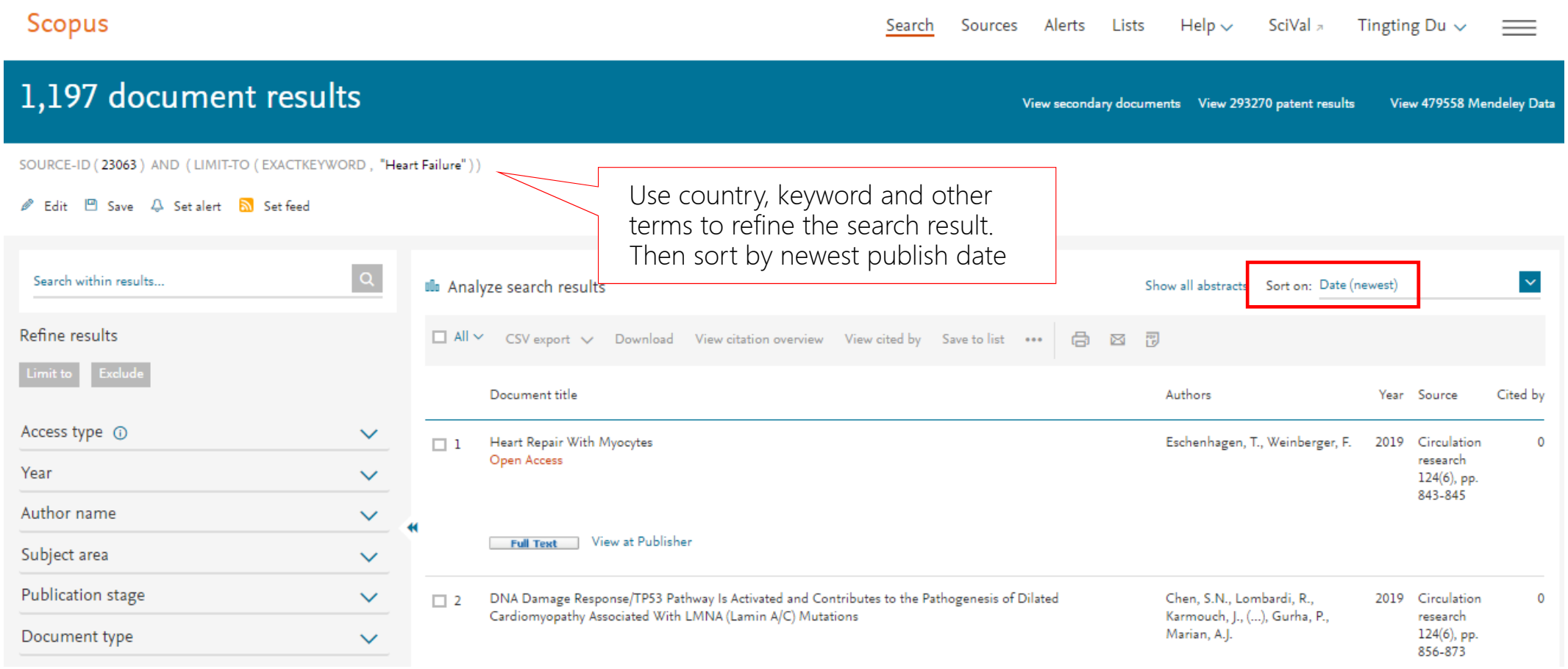

Topic selection & thesis proposal

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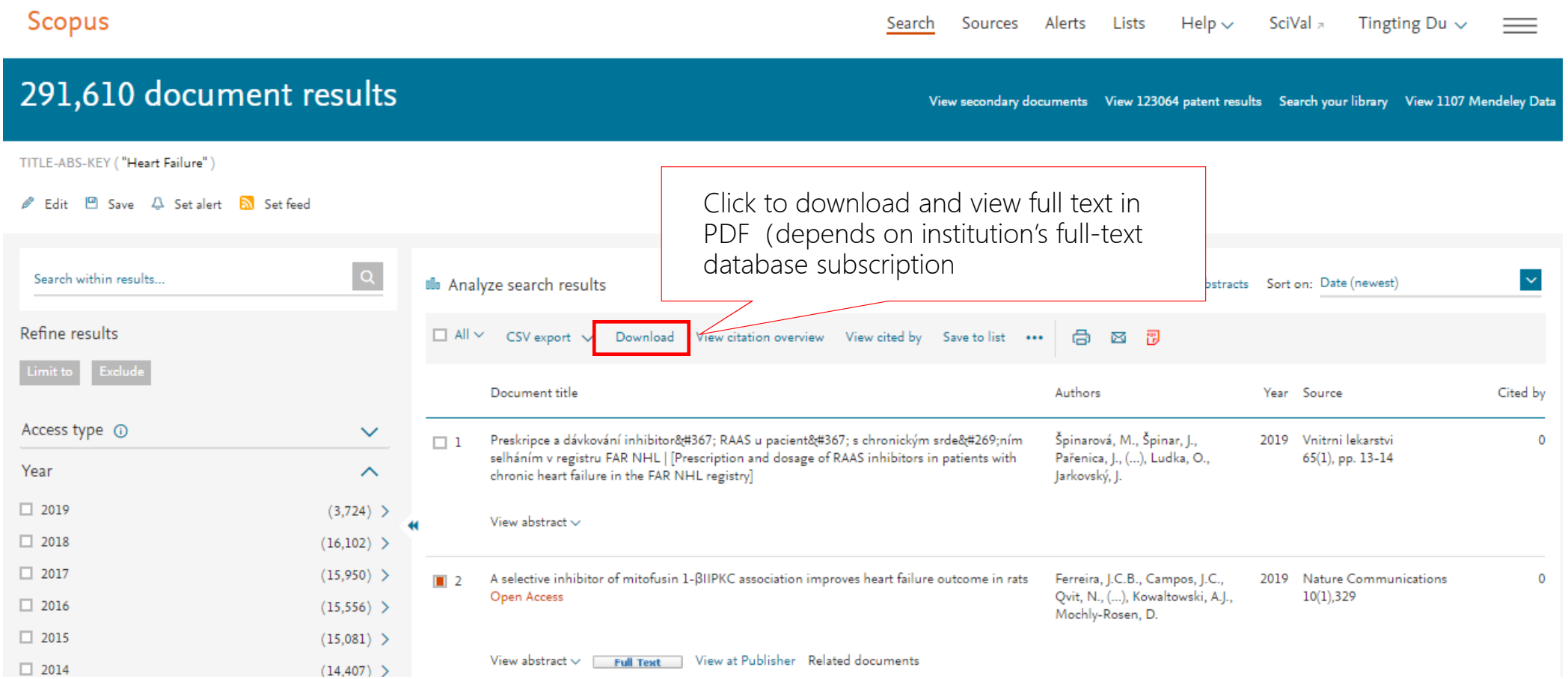

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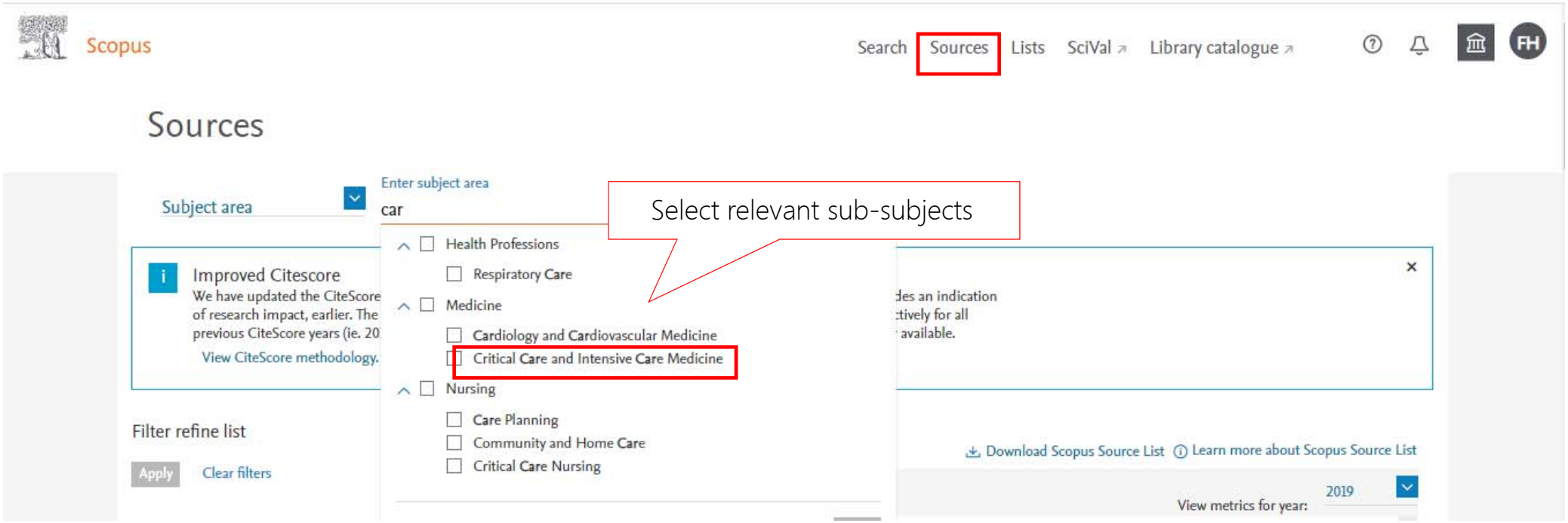
Topic selection & thesis proposal

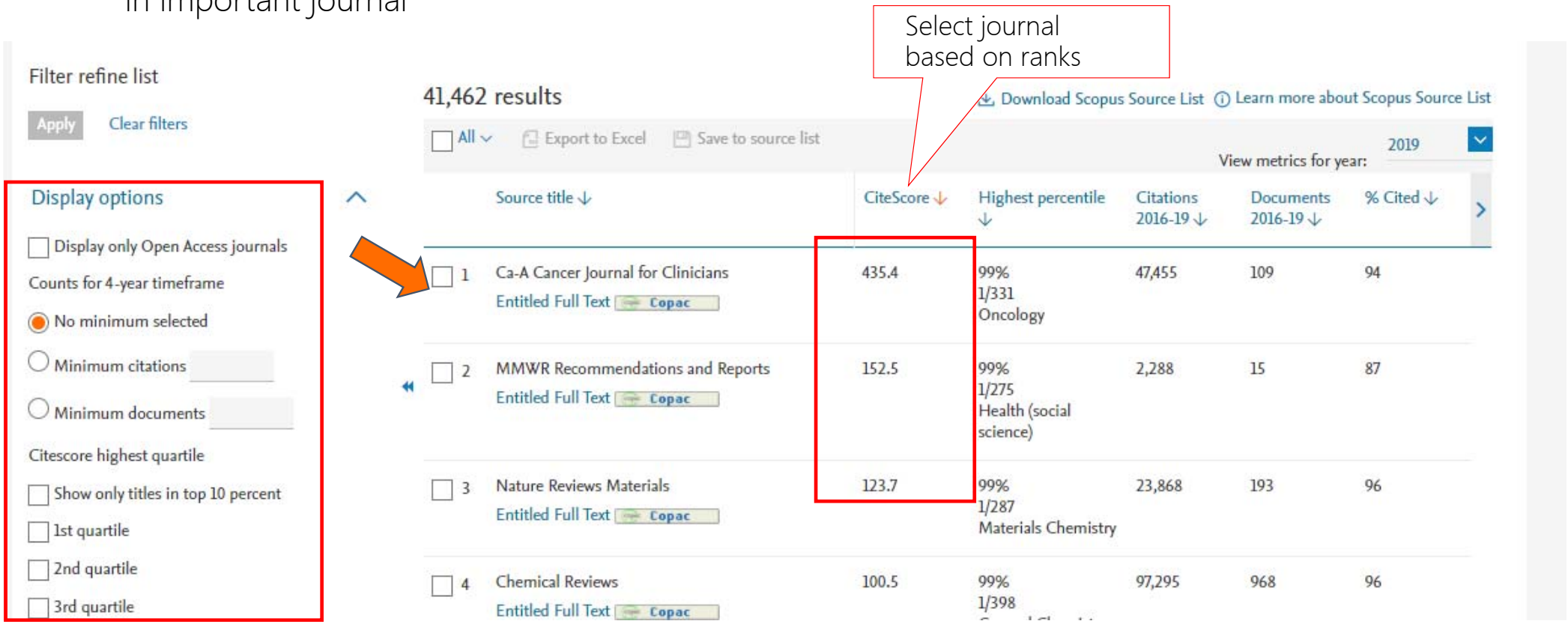
Get information on cutting-edge research development - check latest published literatures in important journal

Scopus ASJC subject classification: 27 subjects, 334 sub-subjects

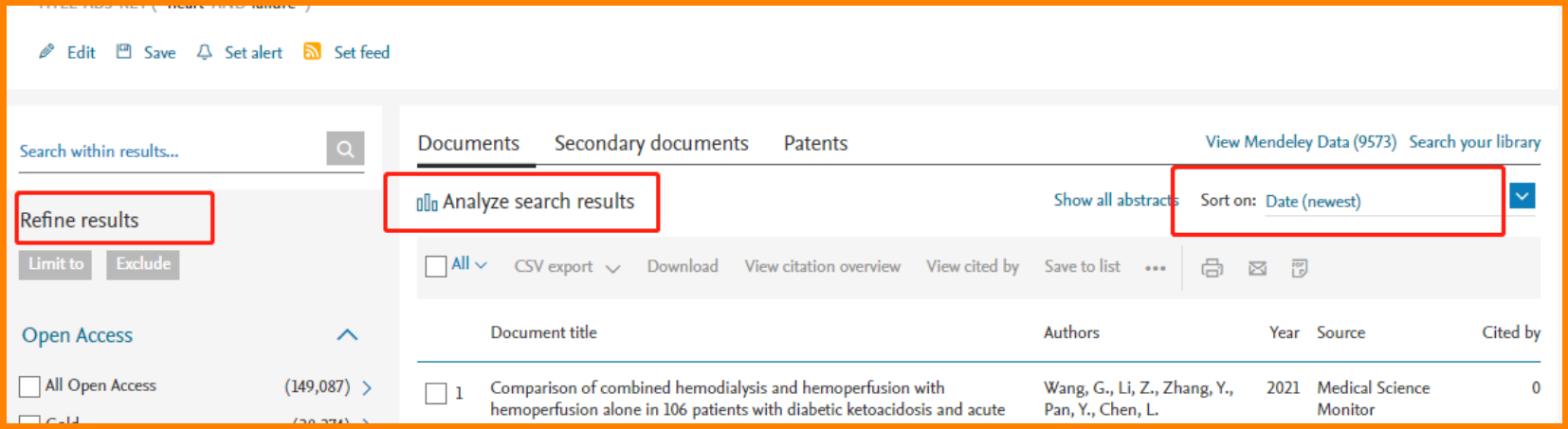


Topic selection & thesis proposal

Get information on cutting-edge research development - check latest published literatures in important journal



QUIZ


Edit
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Set alert
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Search within results...
Refine results
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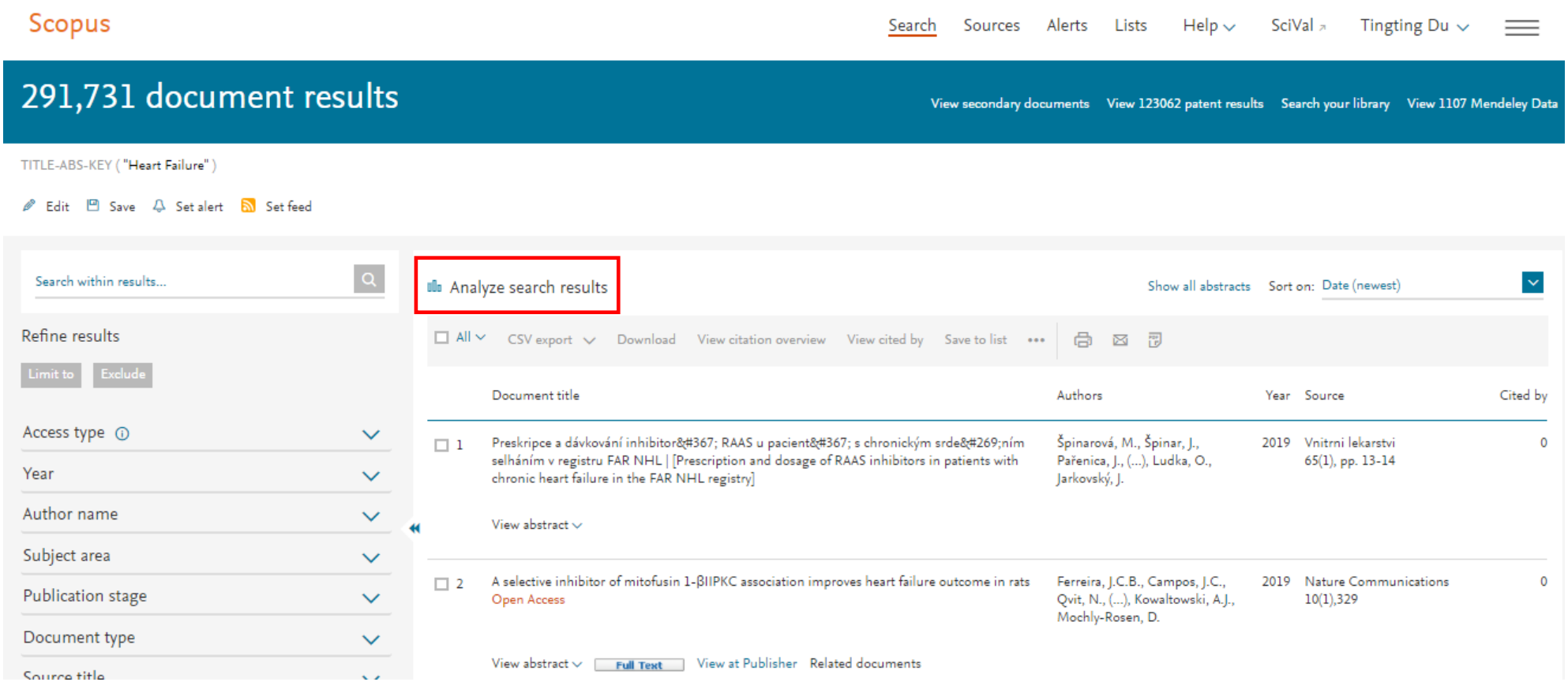
Exclude
Open Access
All Open Access (149,087)
Documents
Secondary documents
Patents
View Mendeley Data (9573)
Search your library
Analyze search results
Show all abstracts
Sort on: Date (newest)
All
CSV export
Download
View citation overview
View cited by
Save to list
Document title
Authors
Year
Source
Cited by
1
Comparison of combined hemodialysis and hemoperfusion with hemoperfusion alone in 106 patients with diabetic ketoacidosis and acute
Wang, G., Li, Z., Zhang, Y., Pan, Y., Chen, L.
2021
Medical Science Monitor
0

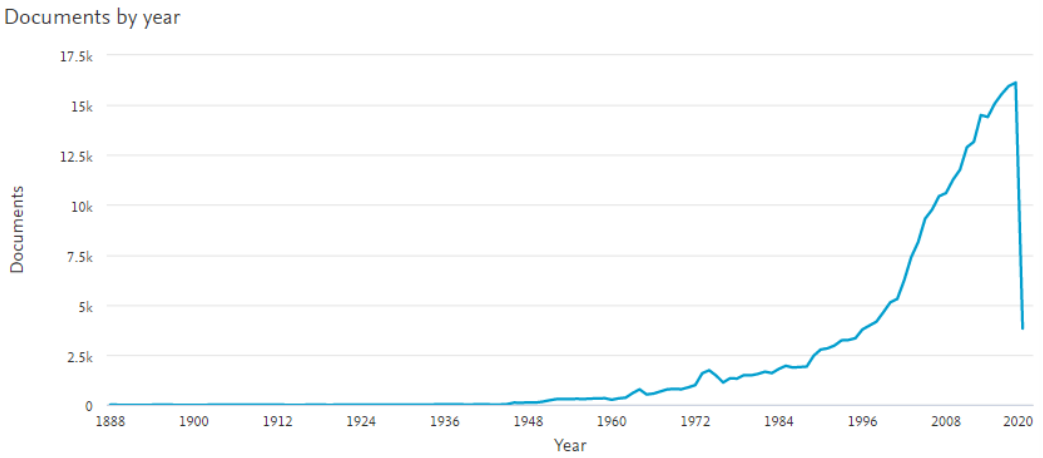
Topic selection & thesis proposal

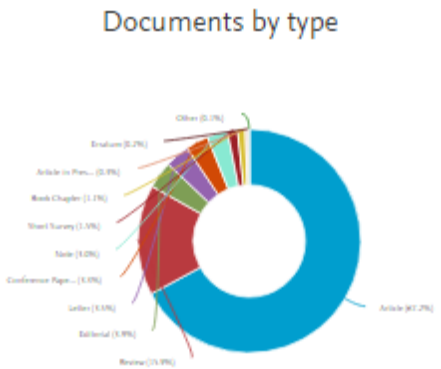
Understand research history and background – Research result analysis

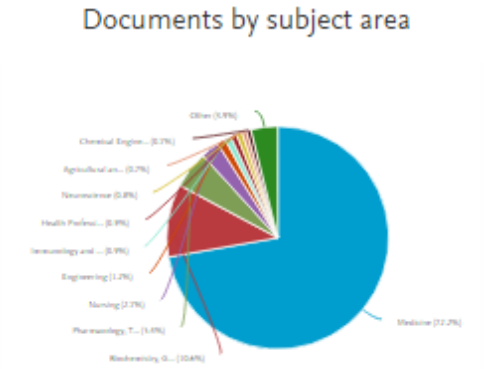


Topic selection & thesis proposal

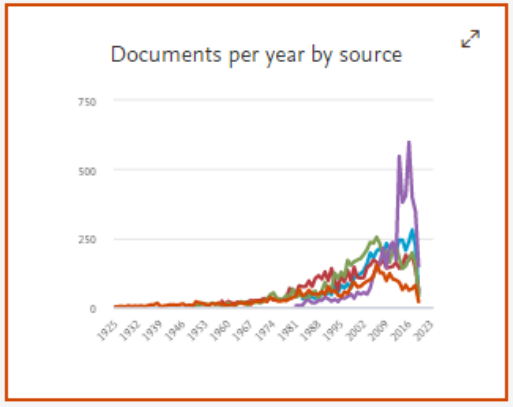
Understand research history and background – Research result analysis

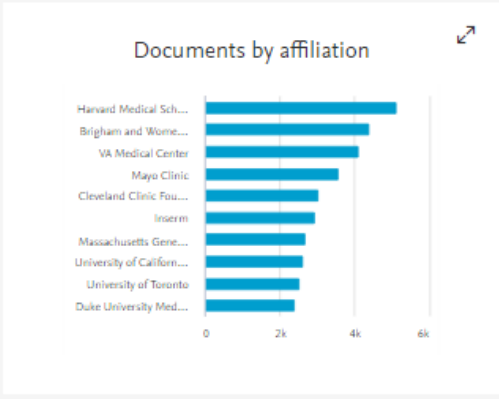


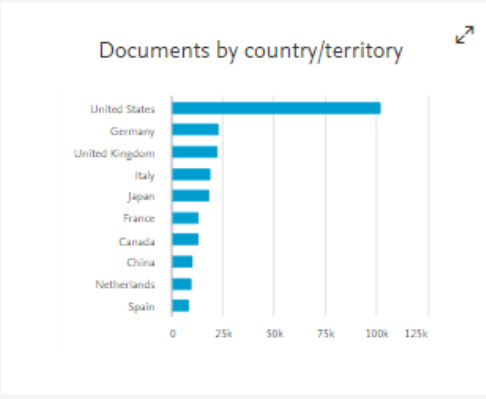




Gathering background information from different angles

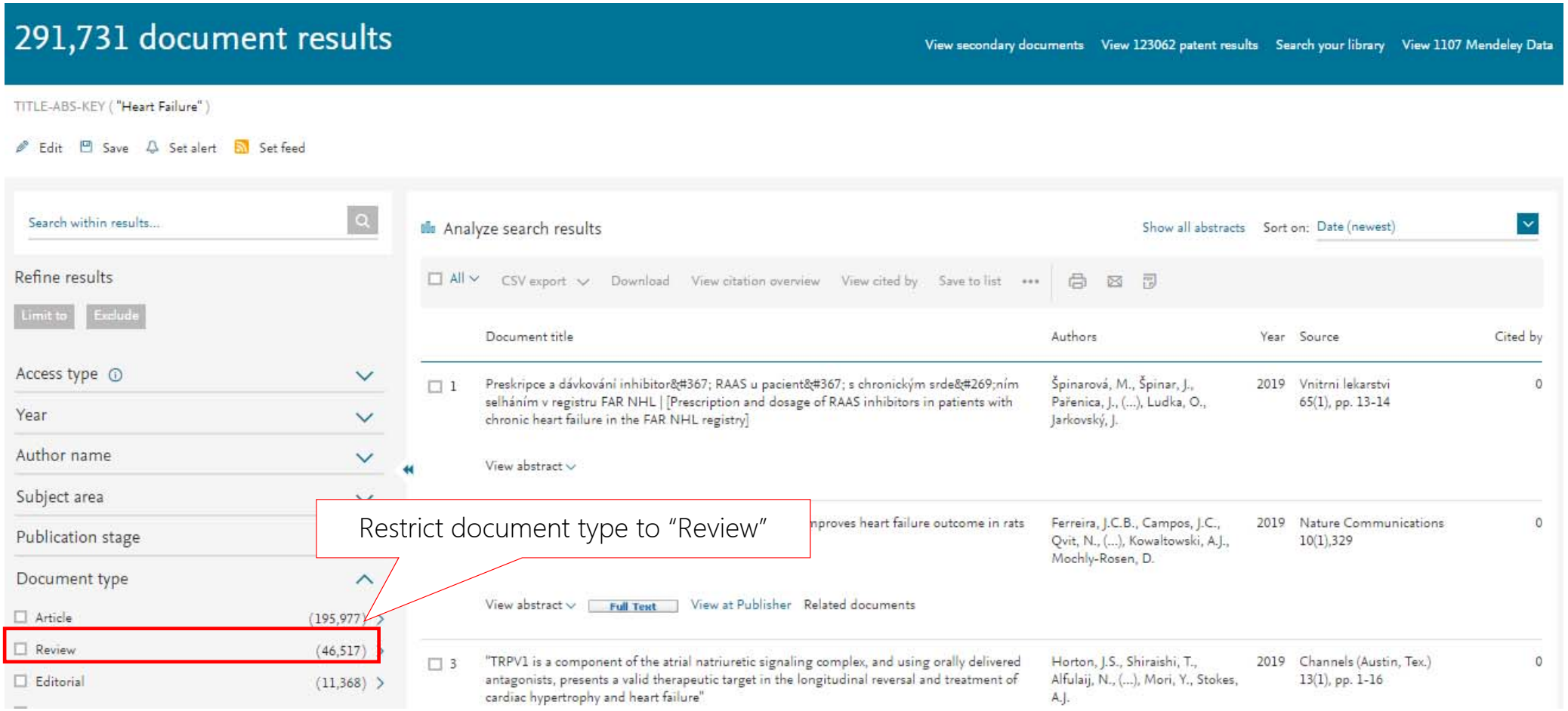






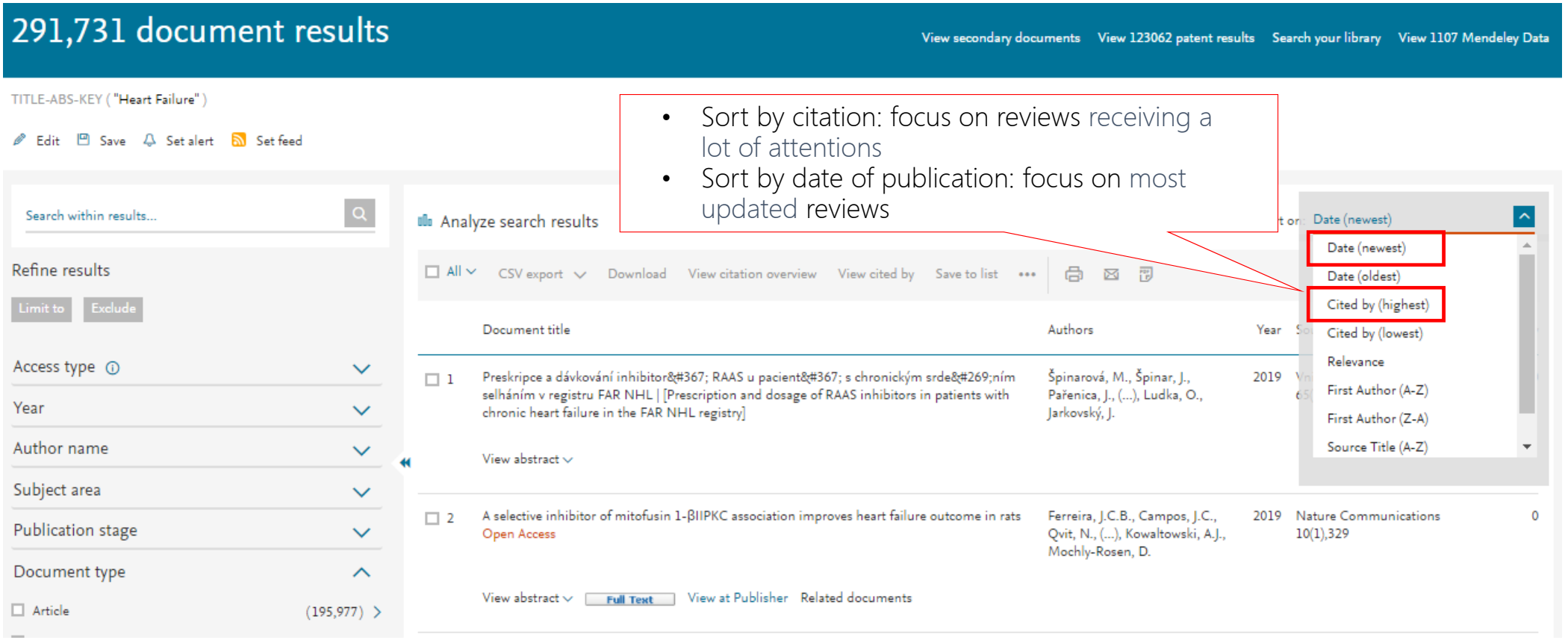
Topic selection & thesis proposal

Understand research history and background – Article review



Topic selection & thesis proposal

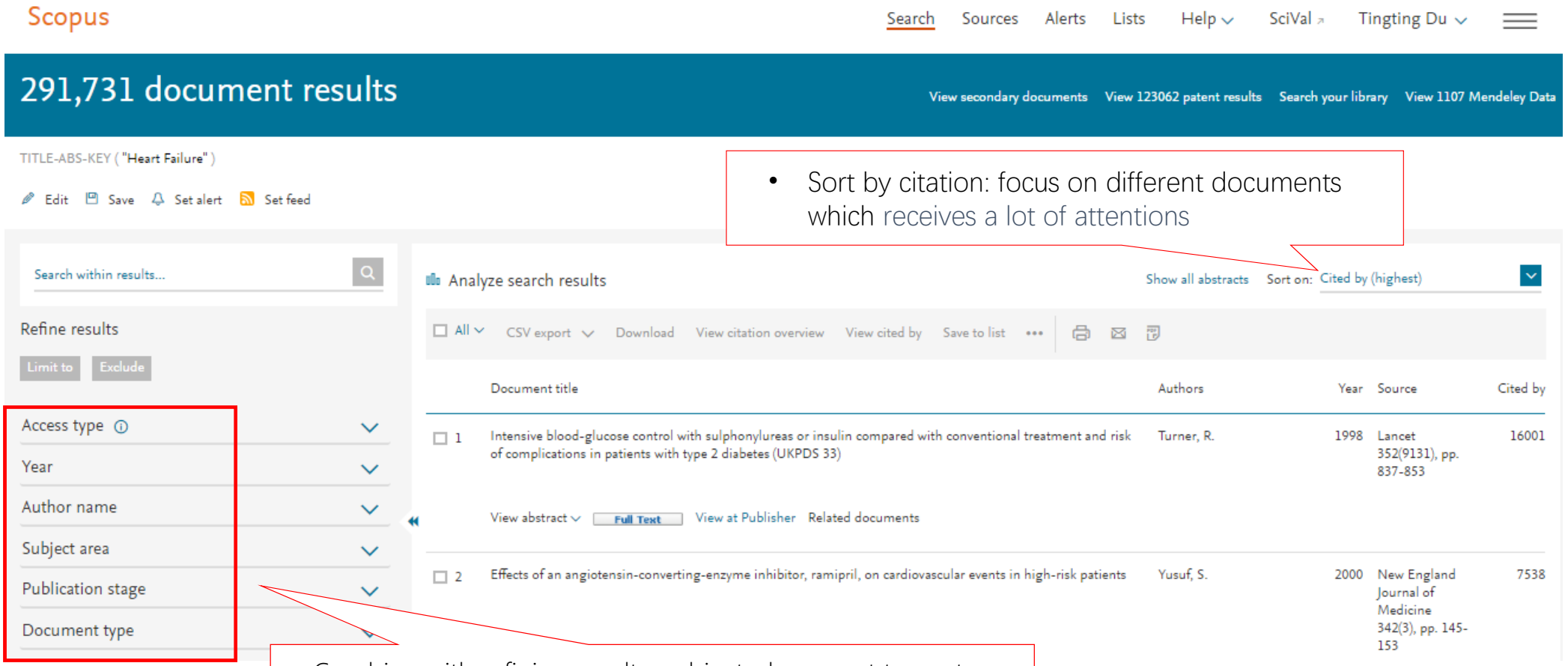
Understand research history and background – Article review



- Sort by citation: focus on reviews receiving a lot of attentions
- Sort by date of publication: focus on most updated reviews

Topic selection & thesis proposal

Understand research history and background – Highly cited documents

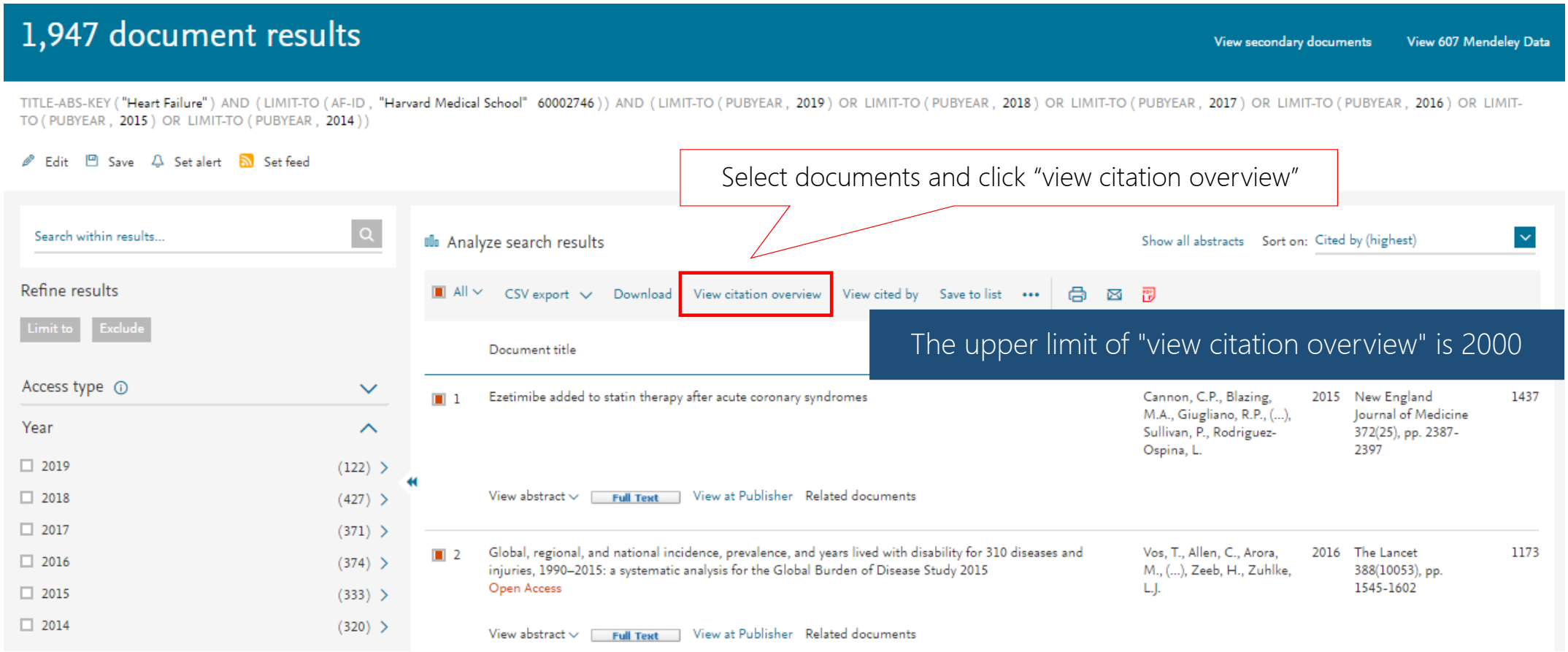


- Sort by citation: focus on different documents which receives a lot of attentions

Combine with refining results: subject, document type etc.

Topic selection & thesis proposal

Understand research history and background – Recently cited documents



Topic selection & thesis proposal

Understand research history and background – Recently cited documents

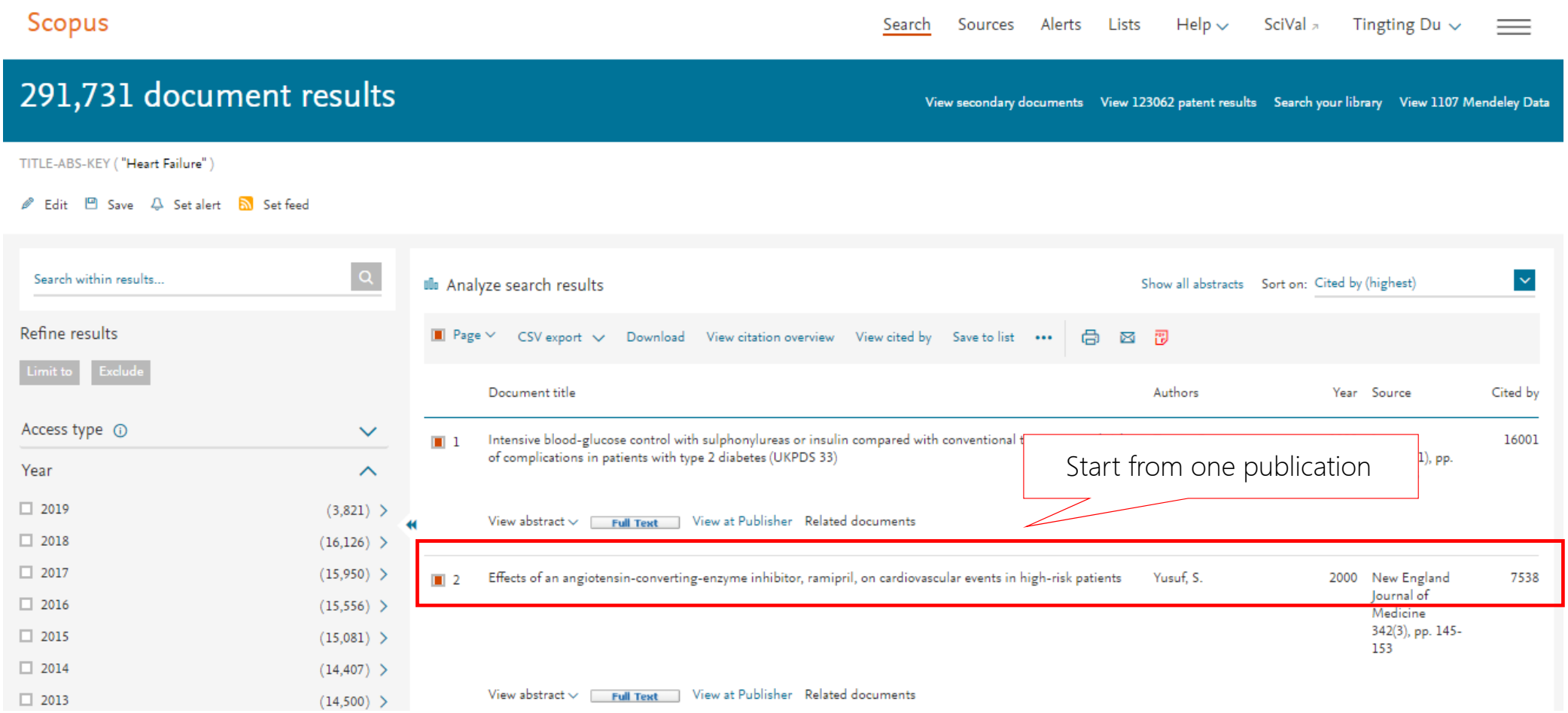
1	Intensive blood-glucose control with sulphonylureas or insul...	1998	11579	857	798	712	702	638	594	121	4422	16001
2	Effects of an angiotensin-converting-enzyme inhibitor, ramip...	2000	6329	275	233	210	188	148	135	20	1209	7538
3	Free radicals and antioxidants in normal physiological funct...	2007	2321	716	807	723	765	751	700	201	4663	6984

131	Guidelines for the diagnosis and treatment of chronic heart ...	2005	1556	75	51	49	38	32	23	5	273	1829
132	A multidisciplinary intervention to prevent the readmission ...	1995	1455	76	71	61	48	51	43	12	362	1817

- Prioritize articles with high recent citation frequency.

Topic selection & thesis proposal

Understand research history and background – Understand the context of a certain research topic



Topic selection & thesis proposal

Understand research history and background – Understand the context of a certain research topic

Topic selection & thesis proposal

Understand research history and background –Understand the context of a certain research topic

New England Journal of Medicine
Volume 342, Issue 3, 20 January 2000, Pages 145-153

Effects of an angiotensin-converting-enzyme inhibitor, ramipril, on cardiovascular events in high-risk patients (Article)

Yusuf, S.

Can. Cardiovasc. Collaboration P., Hamilton General Hospital, 237 Barton St. E., Hamilton, Ont. L8L 2X2, Canada

SciVal Topic Prominence

Topic: Antihypertensive Agents | Thiazides | Blood Pressure

Prominence percentile: 98.885

Topic in Scival

- A "Topic" is a collection of documents with a common focused intellectual interest, such as the work on a specific research problem.
- "Prominence" is comprised of three metrics – recent citation counts, recent views counts, and journal impact (CiteScore). Value + , visibility and momentum of the Topic +.

Topic selection & thesis proposal

Understand research history and background – Understand the context of a certain research topic

Antihypertensive Agents | Thiazides | Blood Pressure (T.218)

Year range: 2015 - 2019

Representative documents

2018 ESC/ESH Guidelines for themanagement of arterial hypertension
Williams, B.,Mancia, G.,Spiering, W....
(2018) *European Heart Journal*
Cited 1458 times

2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines
Whelton, P.K.,Carey, R.M.,Aronow, W.S....
(2018) *Journal of the American College of Cardiology*
Cited 1140 times

Treatment with multiple blood pressure medications, achieved blood pressure, and mortality in older nursing home residents: The PARTAGE study
Benetos, A.,Labat, C.,Rossignol, P....
(2015) *JAMA Internal Medicine*
Cited 139 times

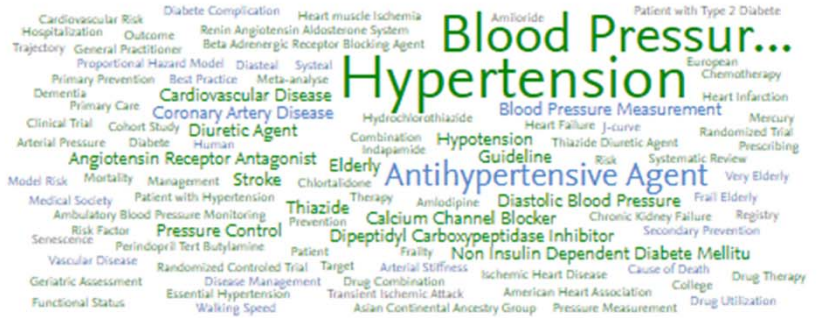
Effects of blood pressure lowering on outcome incidence in hypertension: 4. effects of various classes of antihypertensive drugs - Overview and meta-analyses
Thomopoulos, C.,Parati, G.,Zanchetti, A....
(2015) *Journal of Hypertension*
Cited 101 times

Top authors

	Scholarly Output
Thomopoulos, Costas G.	16
Mancia, Giuseppe	15
Parati, Gianfranco	14
Oparil, Suzanne	13
Aronow, Wilbert S.	13

Keyphrase analysis

Chart | Table



A A A relevance of keyphrase | declining A A A Growth

Analyze in SciVal >

Topic selection & thesis proposal

Understand research history and background – Grasp the context of a certain research topic

- We have identified ~97.000 global research topics by clustering all of Scopus and ranked them by Prominence.
- Prominence is a new indicator that shows the current momentum of a topic by looking at very recent citations, views and CiteScore values.
- Prominence = momentum (not the same as importance!).
- Prominence predicts funding – helps researchers and research managers identify topics in which funding will increase.
- Going way beyond what the competition can do…

Prominence combines 3 metrics to indicate the momentum of the topic

Citation Count in year
Scopus **Views Count**
Average **CiteScore**

Practice

1.Combine different terms to refine the results
2.Analyze the results summarize the research history and background.
3.Select at least one publications to grasp the context of one certain topic

Research progress tracking

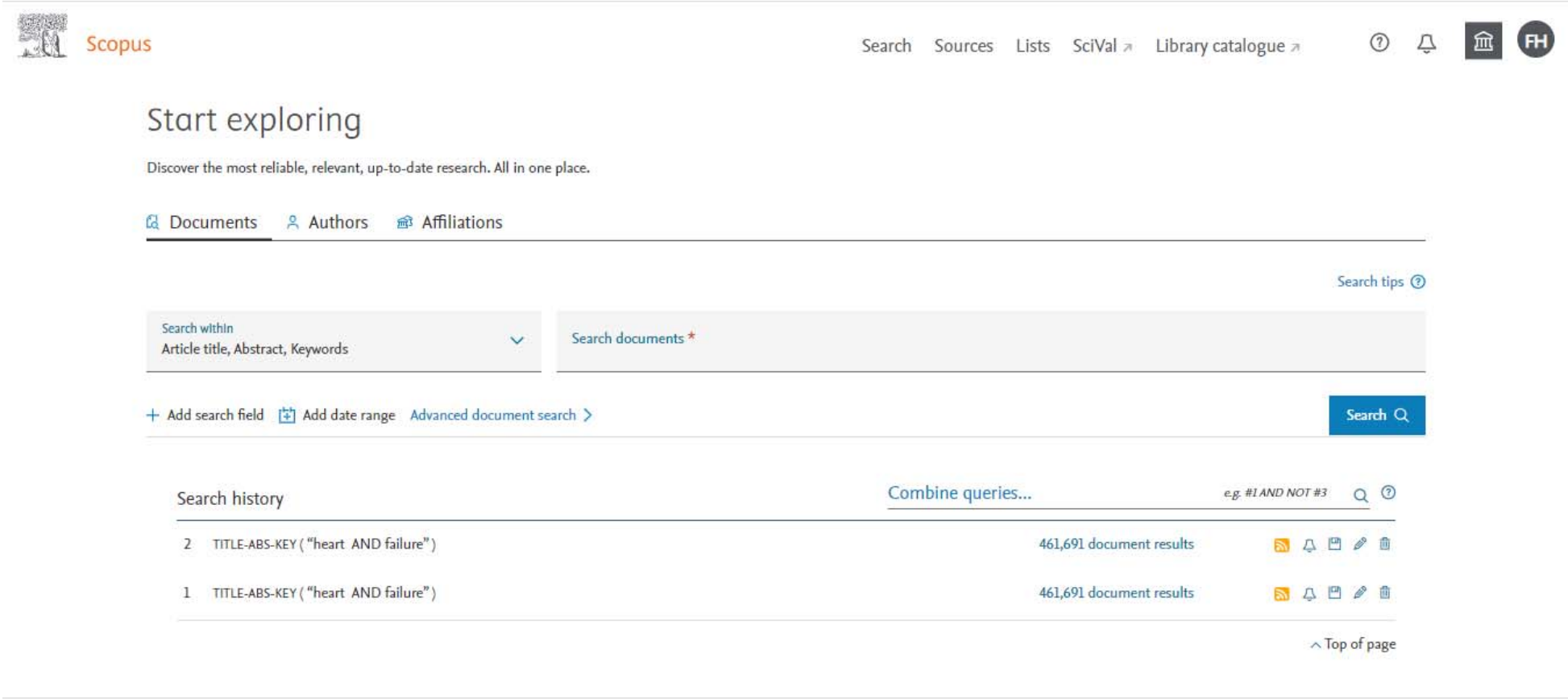
Obtain the latest research progress，ensure the innovation of the research

- Research topic tracking
- Researcher and journal focusing

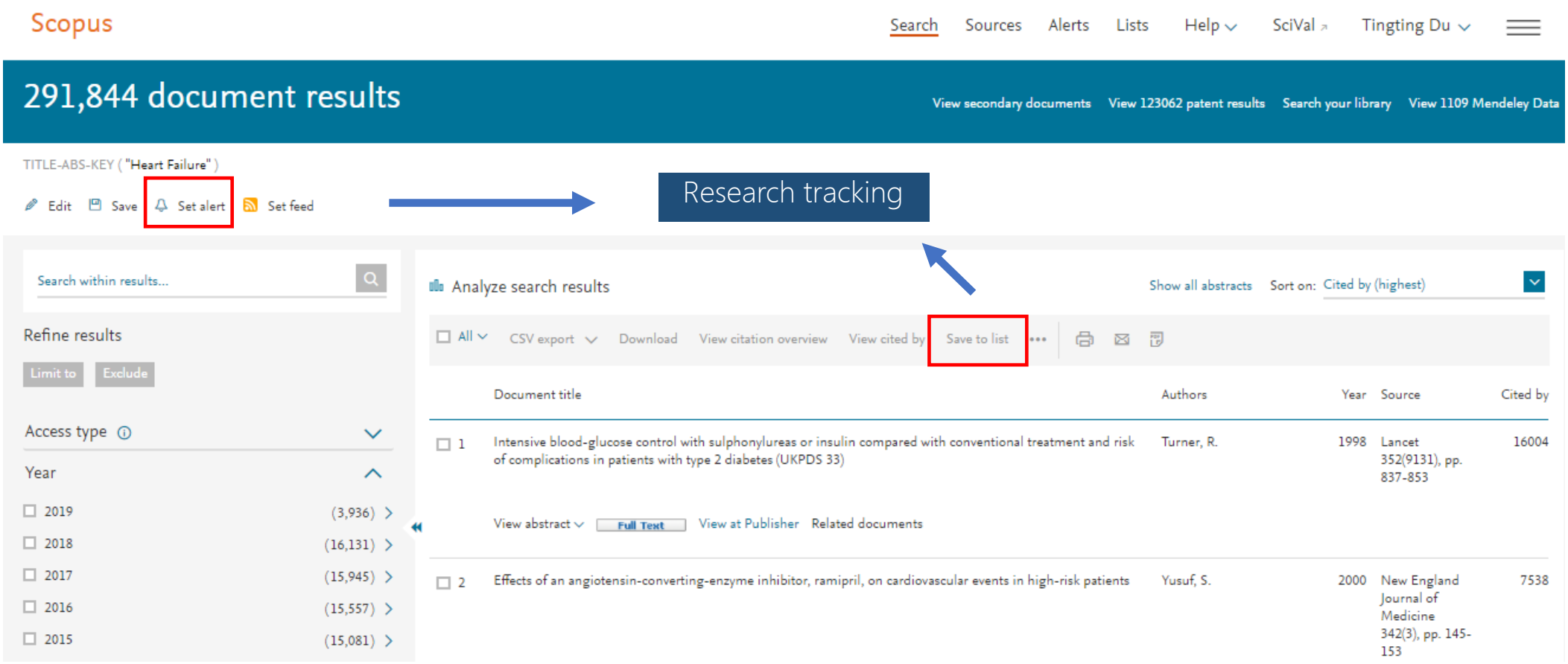
Research progress tracking

Personalized function. Registration needed.

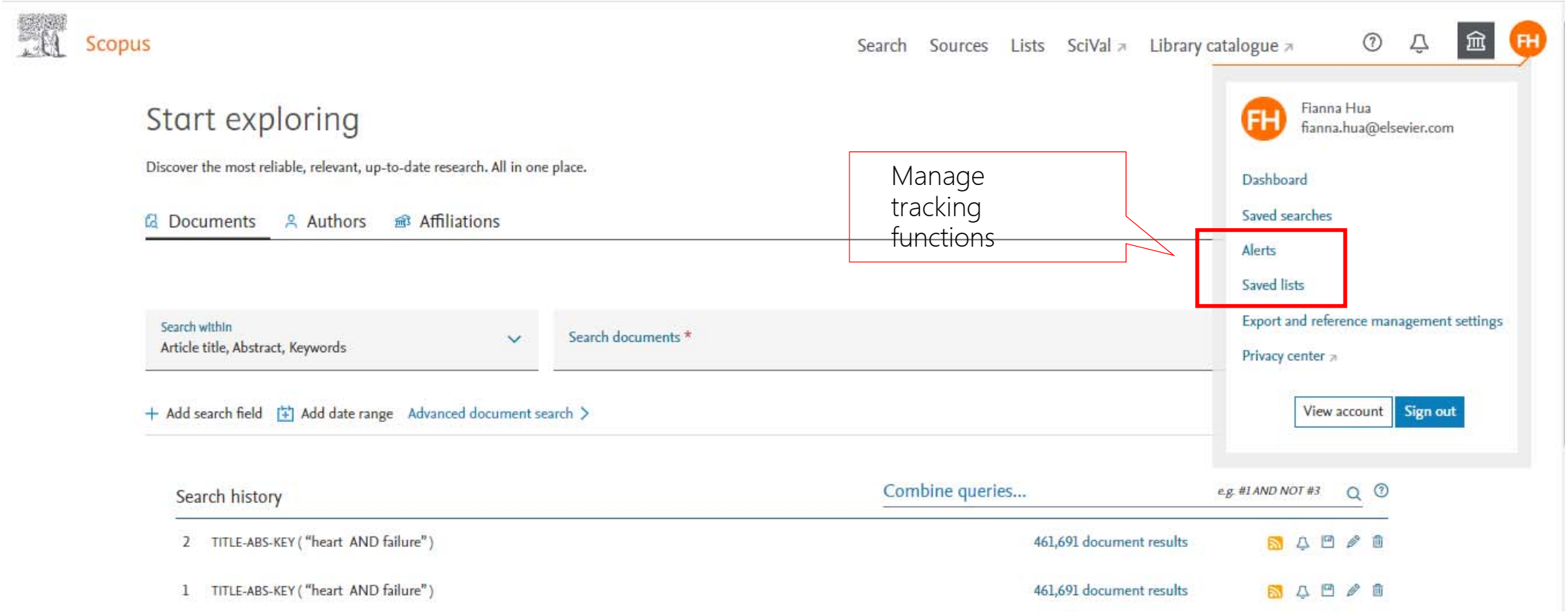
Register with email within institution's IP range



Research progress tracking



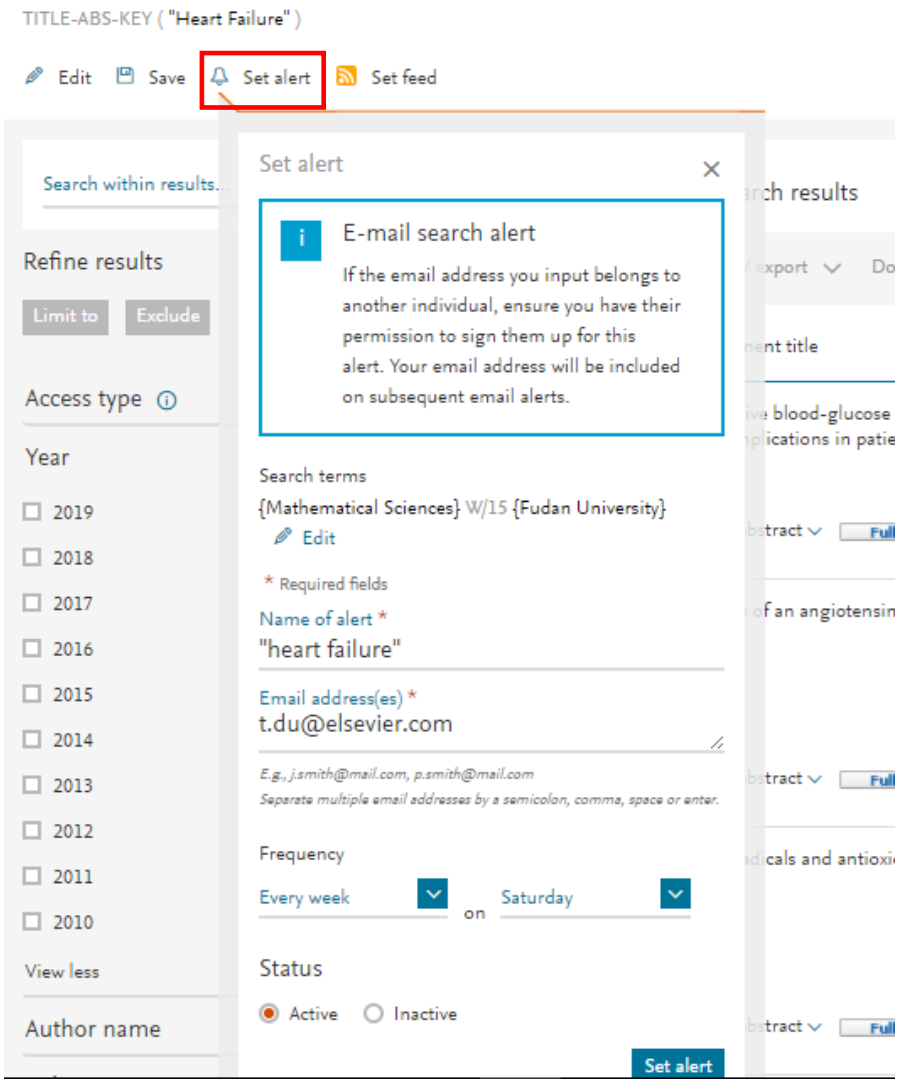
Research progress tracking



Research progress tracking

Set alert

Set email address &
alert frequency



Research progress tracking

Set alert

Thu 1/24/2019 5:29 AM

Scopus <scopus@notifications.elsevier.com>

Scopus – 检索通知, "heart failure"

To Du, Tingting (ELS-SHG)

If there are problems with how this message is displayed, click here to view it in a web browser.
Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Scopus

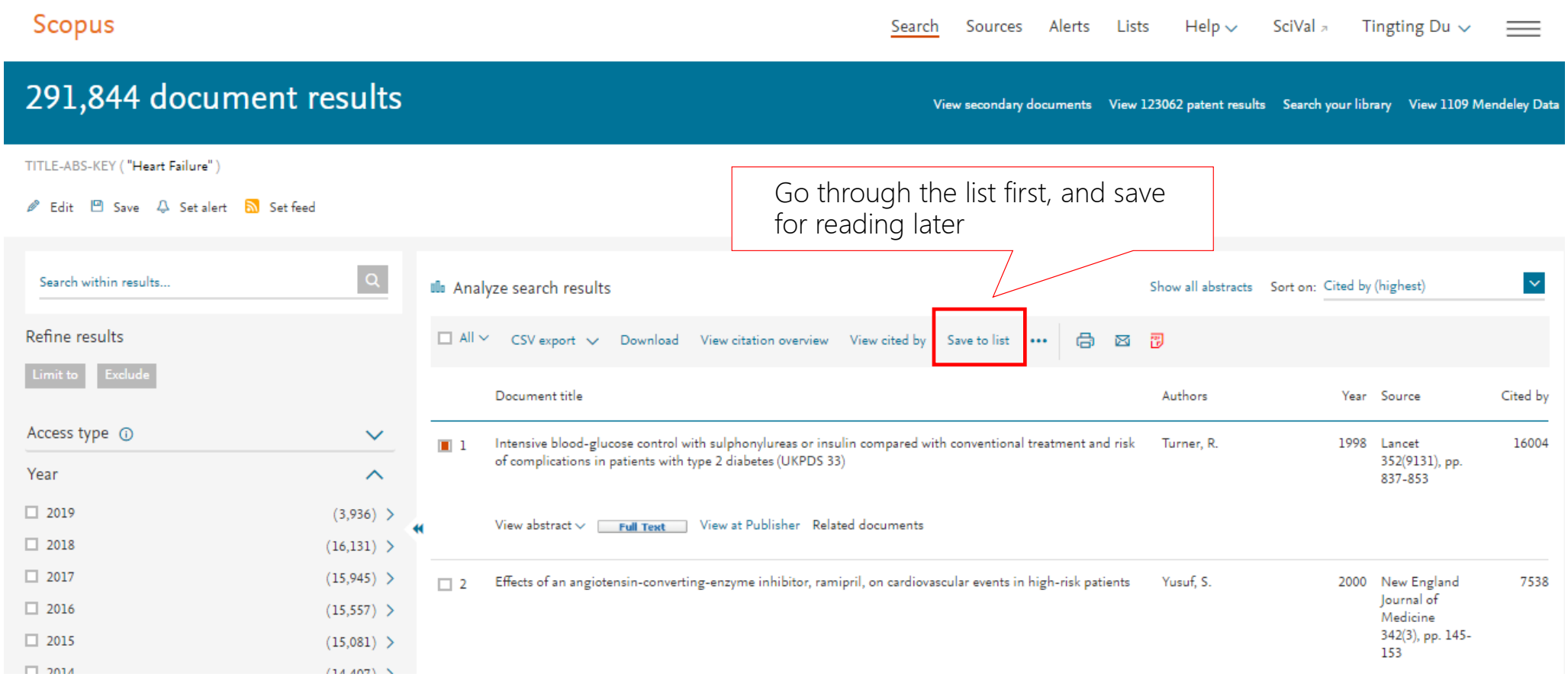
搜索通知: "heart failure"

您名为 ""heart failure"" 的搜索通知已发现 210 个新搜索结果。

	文献标题	作者	年份	来源出版物
1.	Noninvasive Quantification of Pressure-Volume Loops From Brachial Pressure and Cardiovascular Magnetic Resonance	Seemann, F., Arvidsson, P., Nordlund, D., (...), Arheden, H., Heiberg, E.	2019	*Circulation. Cardiovascular imaging, 12(1), p. e008493.*
2.	Adiponectin promotes muscle regeneration through binding to T-cadherin	Tanaka, Y., Kita, S., Nishizawa, H., (...), Maeda, N., Shimomura, I.	2019	*Scientific Reports, 9(1), art. no. 16.*

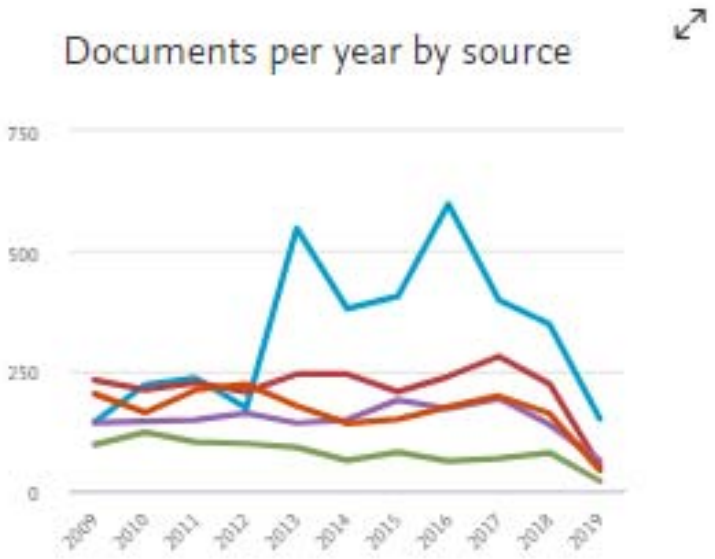
Research progress tracking

Save to list

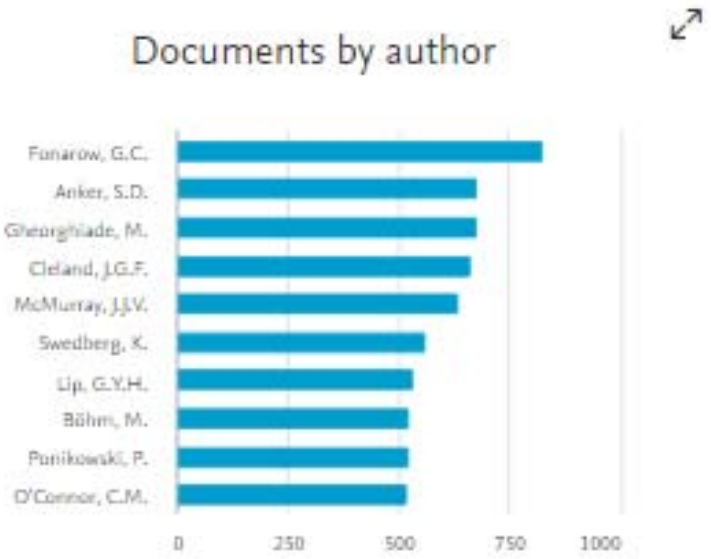


Research progress tracking

Track researchers & journals from result analysis



Journals

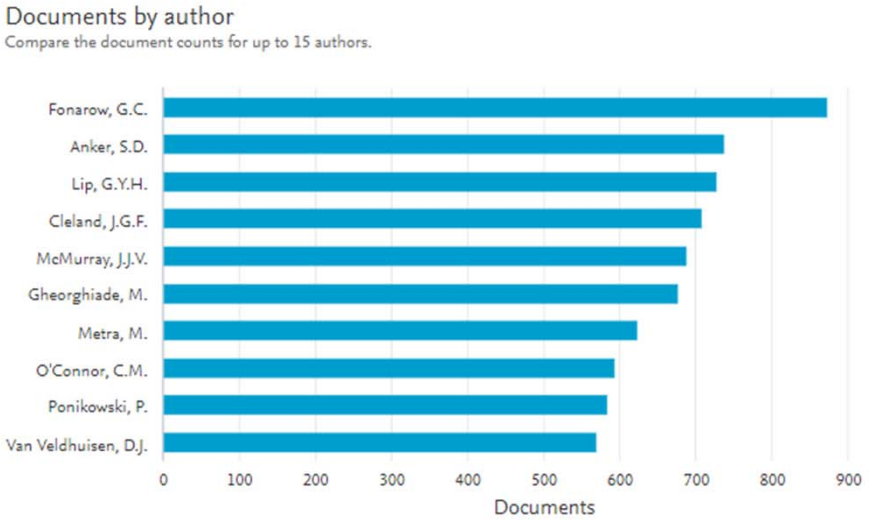


Researchers

Research progress tracking

Track researchers & journals from result analysis

Author	Documents
Fonarow, G.C.	871
Anker, S.D.	736
Lip, G.Y.H.	726
Cleland, J.G.F.	706
McMurray, J.J.V.	687
Gheorghiade, M.	675
Metra, M.	622
O'Connor, C.M.	593



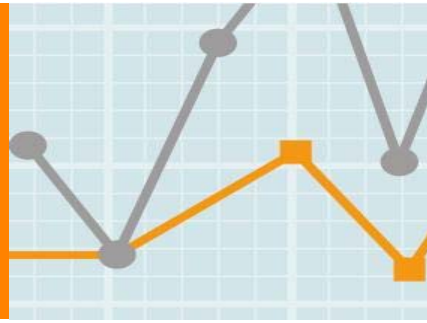
Locate journals and authors through search results analysis

Source	Documents
Circulation	6210
American Journal Of Cardiology	5646
International Journal Of Cardiology	5261
Journal Of The American College Of Cardiology	5187
European Heart Journal	3686
European Journal Of Heart Failure	3682
American Heart Journal	3636
Journal Of Cardiac Failure	2643

Research progress tracking

Track researchers & journals from result analysis

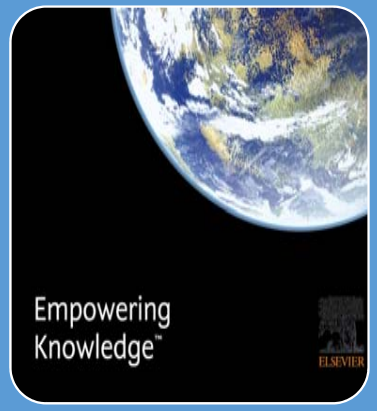
Conclusions



ELSEVIER

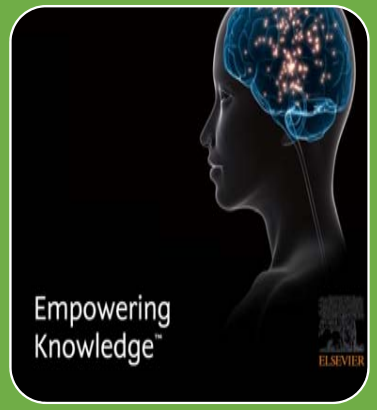
Empowering Knowledge

Topic selection & thesis proposal



- Quickly understand research history & background
- Obtain cutting-edge research development information

Research progress tracking

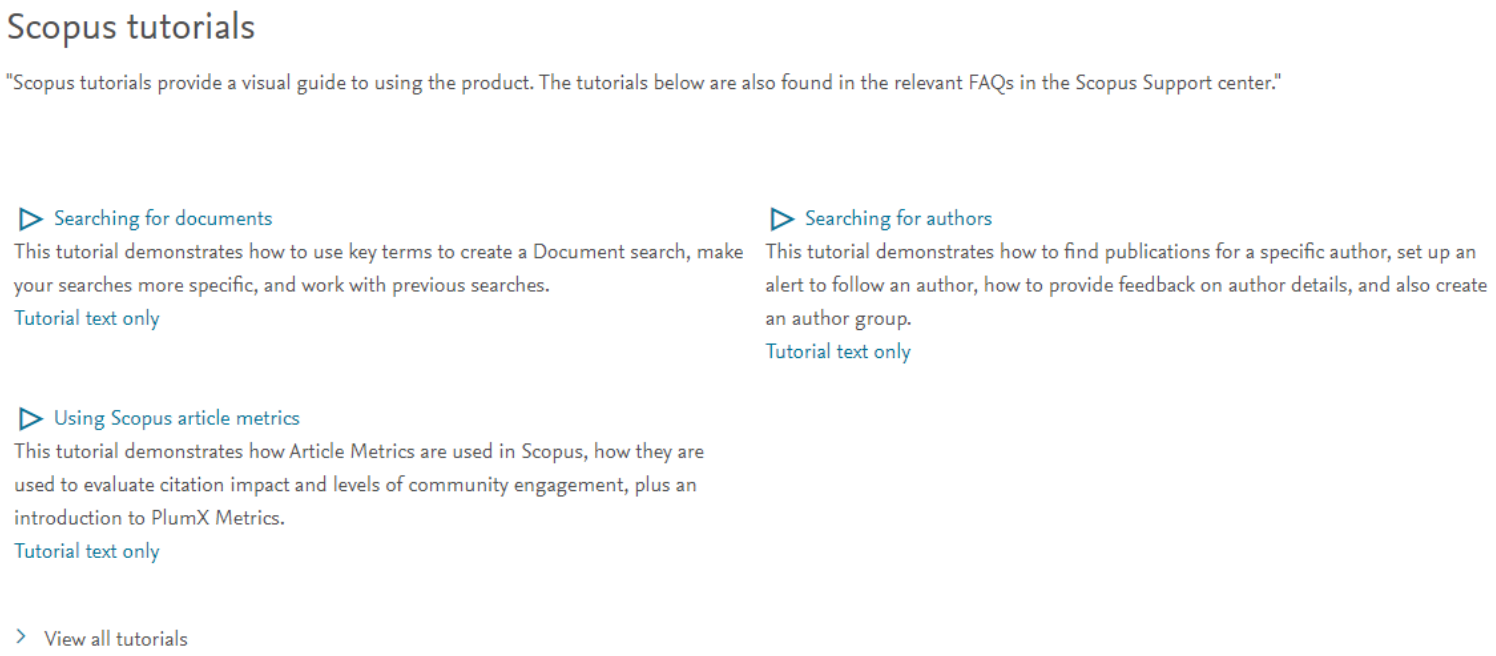


- Obtain the latest research progress
- Ensure the innovation of the research

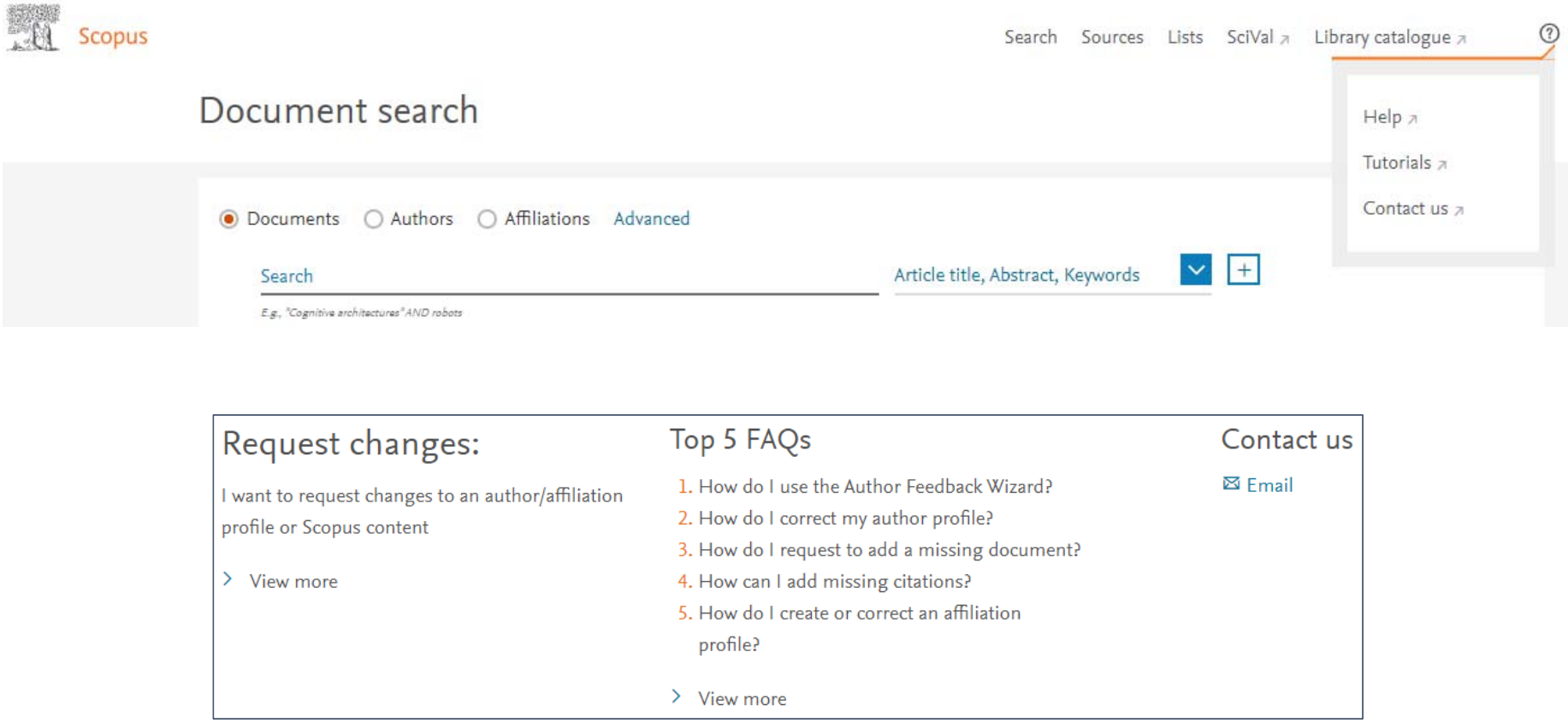
More resources

https://service.elsevier.com/app/overview/scopus/

Scopus tutorials



Help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Tutorials
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Affiliations
Advanced
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Article title, Abstract, Keywords
E.g., "Cognitive architectures" AND robots
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I want to request changes to an author/affiliation profile or Scopus content
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2. How do I correct my author profile?
3. How do I request to add a missing document?
4. How can I add missing citations?
5. How do I create or correct an affiliation profile?
View more
Contact us
Email

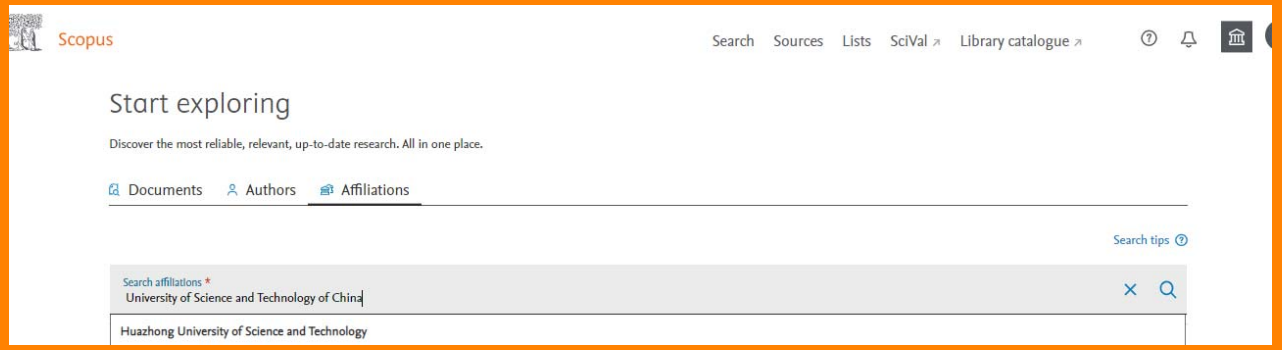
Practice

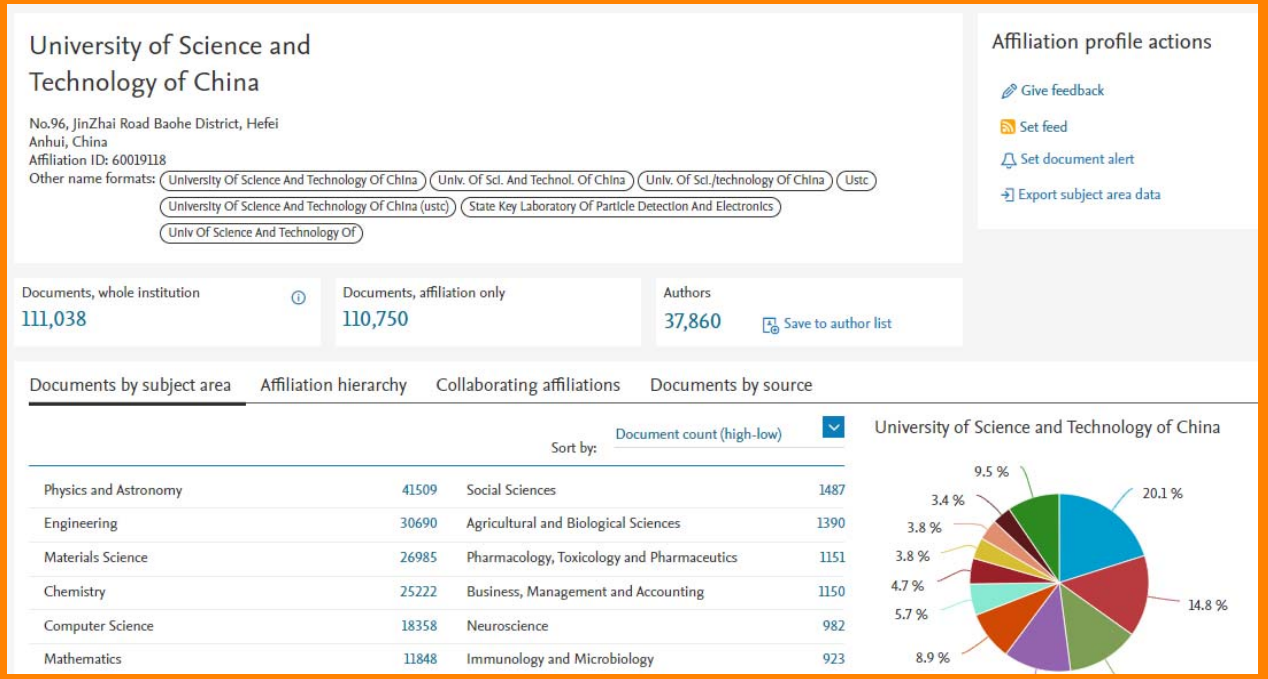
1.Search by Affiliation

2.Have an overview of scholarly outputs of USTC

3. Filter to one subject and analyze search results

4.Identify the top journal with the largest schoraly output from USTC





Content

- SciVal -Brief introduction
- SciVal Metrics(Partial)
- Research Performance overview
- Tracking and benchmarking research performance
- Analyzing research trends by Topics

What is SciVal?

SciVal enables you to navigate the world of research and devise an optimal plan to drive and analyze your performance.

- Scopus data from 1996 to current date
- Access to research performance of over 17,000 research institutions and 230 nations worldwide
- Top of Prominence - ~96000 topics for a complete portfolio analysis
- Broad spectrum of metrics covering publication, funding, patent, media, etc.

SciVal

Overview

- Access comprehensive research performance summaries of any desired research entities.
- Identify their unique research strengths and multidisciplinary research areas.

SciVal

Benchmarking

- Compare the performance of institutions, countries, and pre-defined groups, or create your own research areas and monitor progress over time.

Collaboration

- Identify and analyze existing and potential collaboration opportunities based on publication output and citation impact.

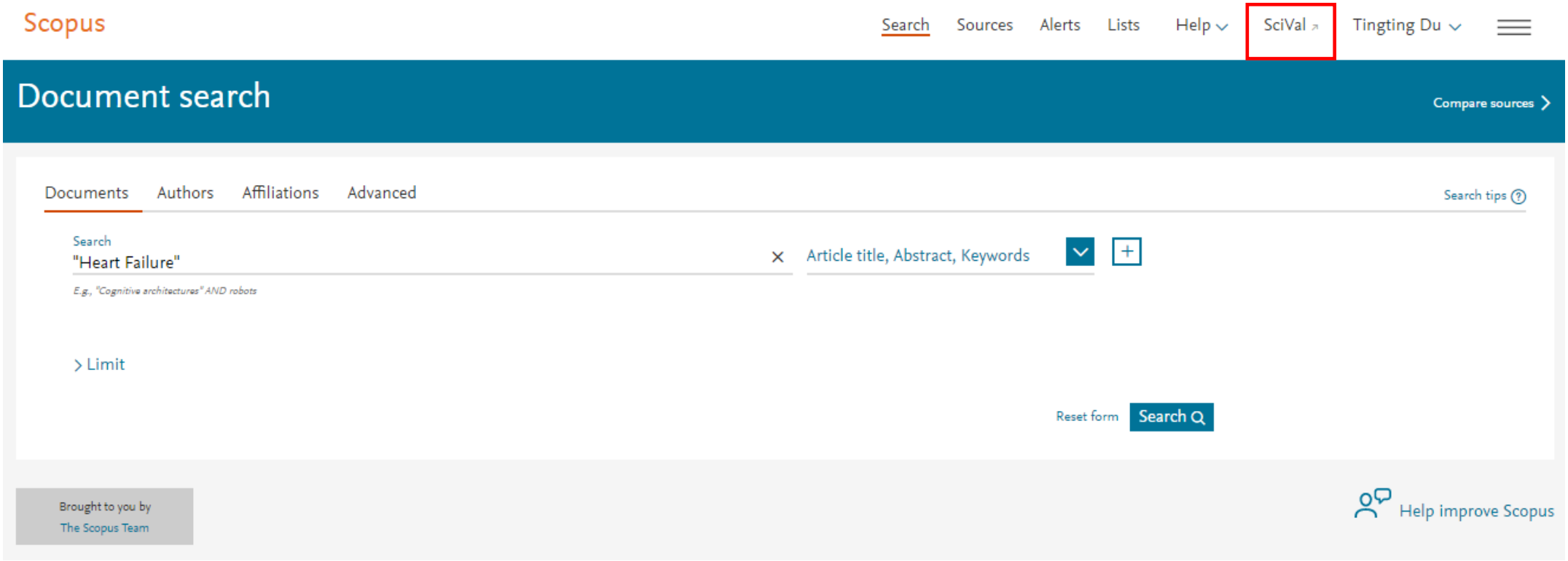
SciVal

Trends

- Analyze the research trends of any Research Area, Topic or Topic Cluster. Use this to discover key researchers, rising stars and current developments in fields of interest.

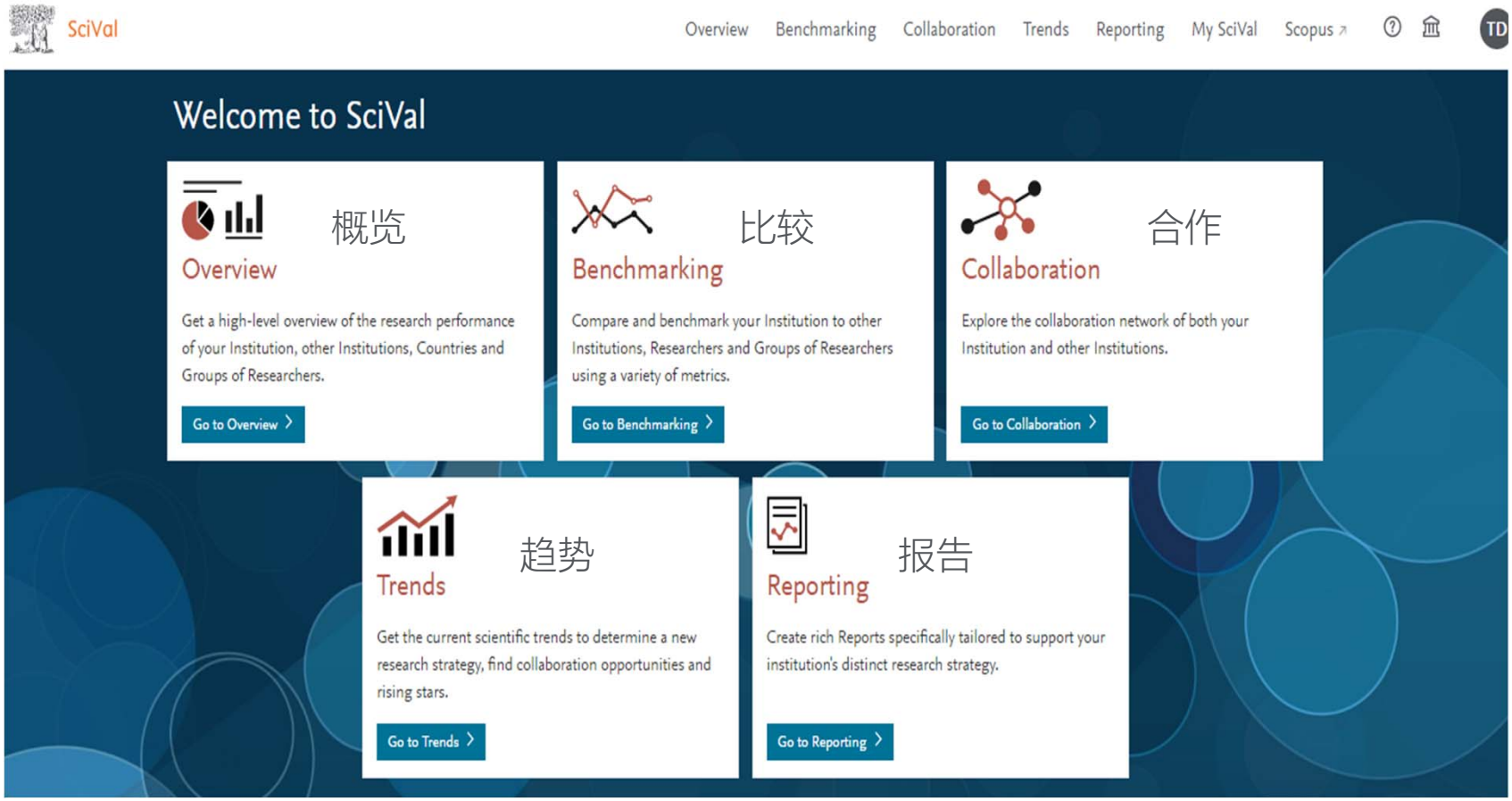
Topic selection & thesis proposal

More results with initial search and then narrow down



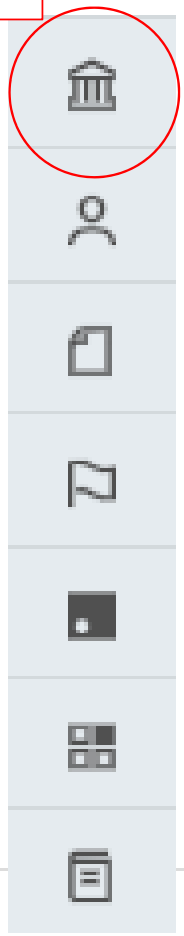
SciVal home page

Click any module to enter the user interface



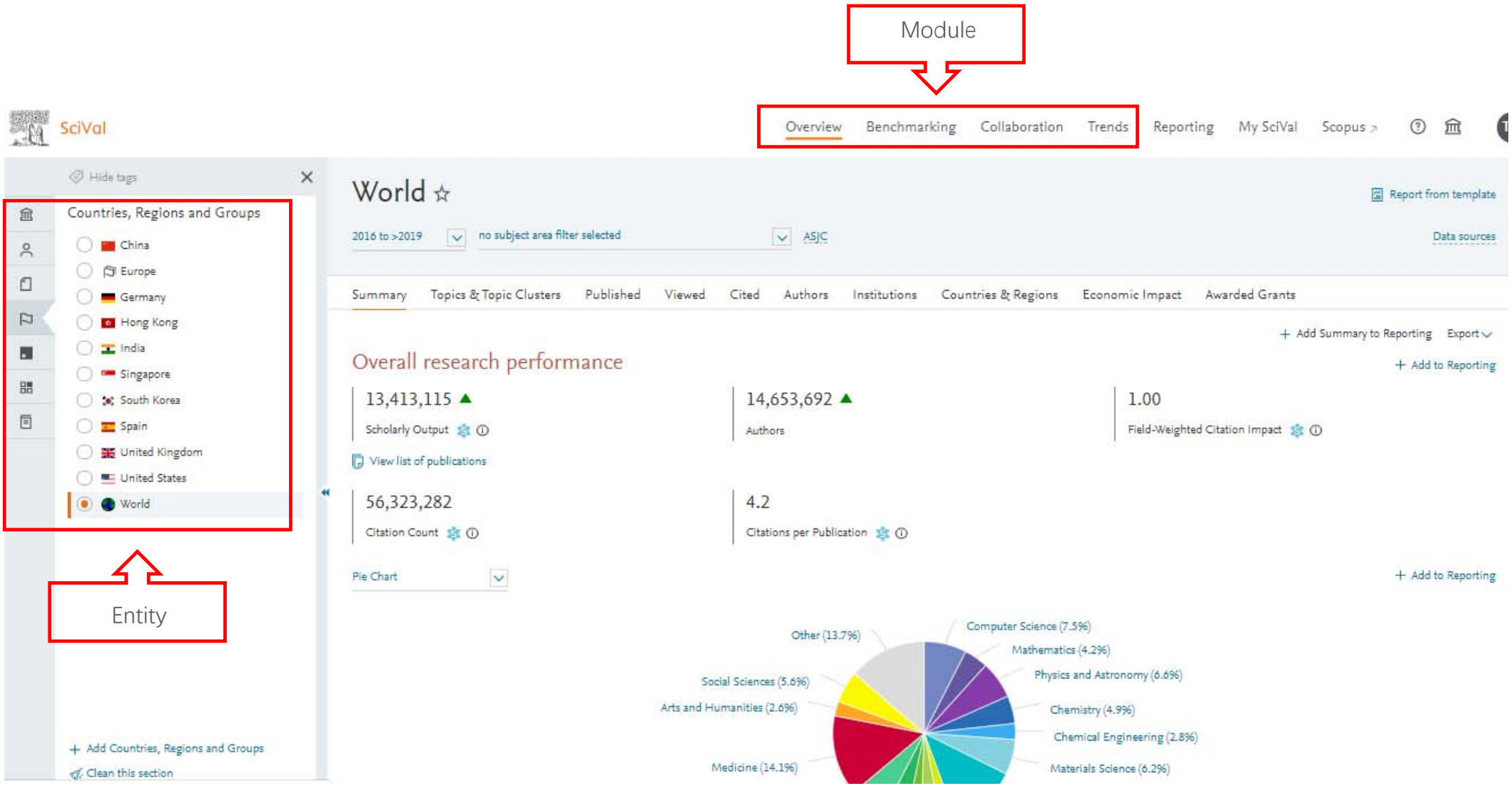
SciVal user interface

Entity for analysis



- **Institutions & group**: university, research institute, corporate, university league, province(city)
- **Researcher & group**: individual researcher, research team, institutional hierarchy
- **Publication sets**
- **Country, region & group**
- **Topic & topic cluster**
- **Research area**
- **Scopus source**

SciVal user interface



SciVal Metrics(Partial)

SciVal metrics（Partial）

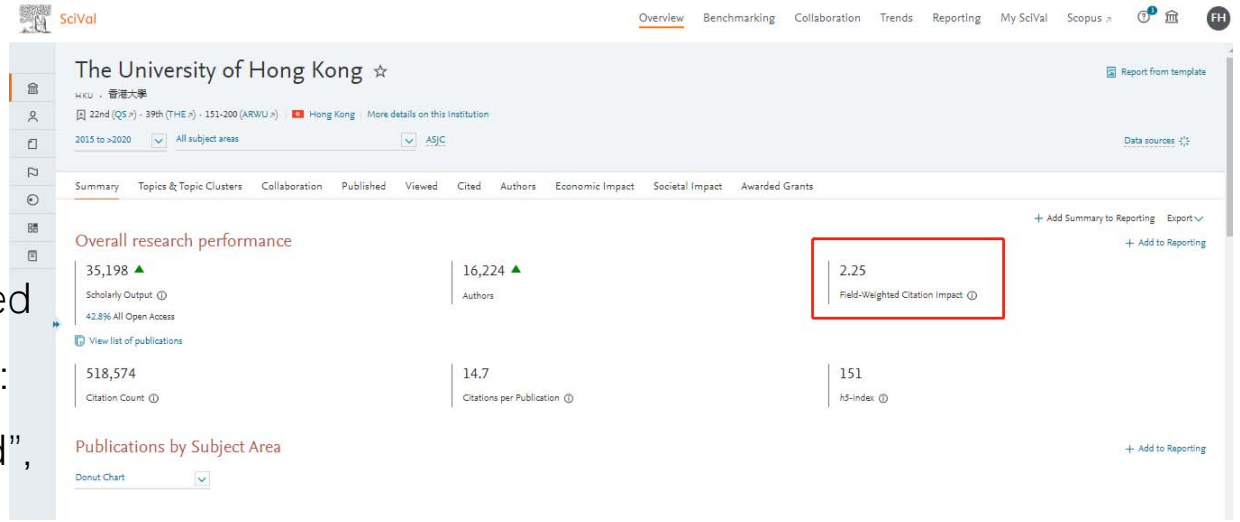
- Field-Weighted Citation Impact, FWCI
- Outputs in Top Citation Percentiles
- Publications in Top Journal Percentiles
- Economic Impact
- Topic / Topic Clusters

Field-Weighted Citation Impact, FWCI

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?

Similar publications are those publications in the Scopus database that have the same publication year, publication type, and discipline.

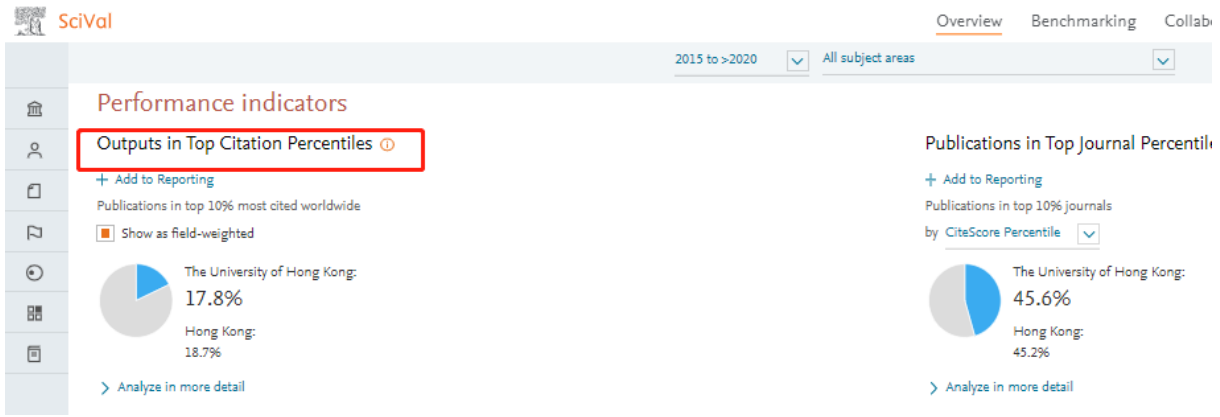
A Field-Weighted Citation Impact of 1.00 indicates that the entity's publications have been cited exactly as would be expected based on the global average for similar publications: the Field-Weighted Citation Impact of "World", or the entire Scopus database, is 1.00.



Outputs in Top Citation Percentiles

Outputs in Top Citation Percentiles in SciVal indicates the extent to which an entity's publications are present in the most-cited percentiles of a data universe: how many publications are in the top 1%, 5%, 10% or 25% of the most-cited publications?

The citation counts that represent the thresholds of the 1%, 5%, 10% and 25% most-cited papers in Scopus per Publication Year are calculated. SciVal uses these citation thresholds to calculate the number of an entity's publications that fall within each percentile range.



Publications in Top Journal Percentiles

Publications in Top Journal Percentiles in SciVal indicates the extent to which an entity's publications are present in the most-cited journals in the data universe: how many publications are in the top 1%, 5%, 10% or 25% of the most-cited journals indexed by Scopus?

The CiteScore, SNIP or SJR values at the thresholds of the top 1%, 5%, 10% and 25% most-cited journals in Scopus per Publication Year are calculated. SciVal uses these journal metric thresholds to calculate the number of an entity's publications within indexed items that fall within each percentile range.

Economic Impact

Citations from patents to scholarly outputs indicate a link between academia and industry, in other words knowledge flows. It is a strong indicator of the relevance that research could have to industry.

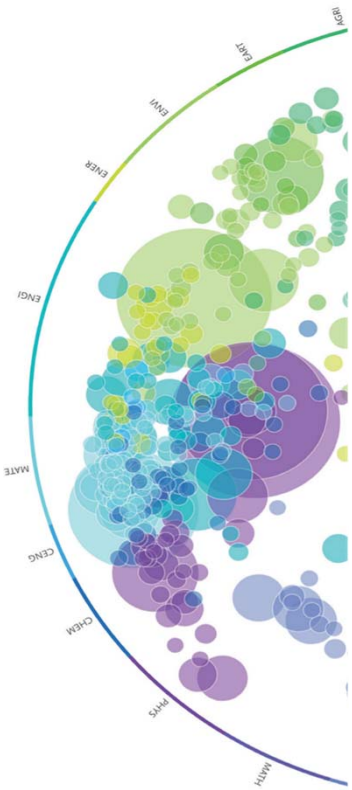
The indicators commonly used in SciVal to measure economic impact are:

- Patent-Cited Scholarly Output: The count of scholarly output published by an entity (e.g. a university) that have been cited in patents.

- Citing-Patents Count: The count of patents citing the scholarly output published by an entity (e.g. a university).

Topic / Topic Clusters

- Cover the contents of Scopus since 1996. ~96,000 research topics are generated based on direct citation links between documents.
- Prominence as a new indicator that shows the current momentum/visibility of a topic by looking at very recent citations, views and CiteScore values.
- Topic Cluster is an intermediate level that aggregates from Topics.



Topic / Topic Clusters

- A topic is a collection of documents with a common intellectual interest - a "research problem"
- Topics can be large or small, new or old, growing or declining
- Topics are dynamic and can evolve

Topic / Topic Clusters

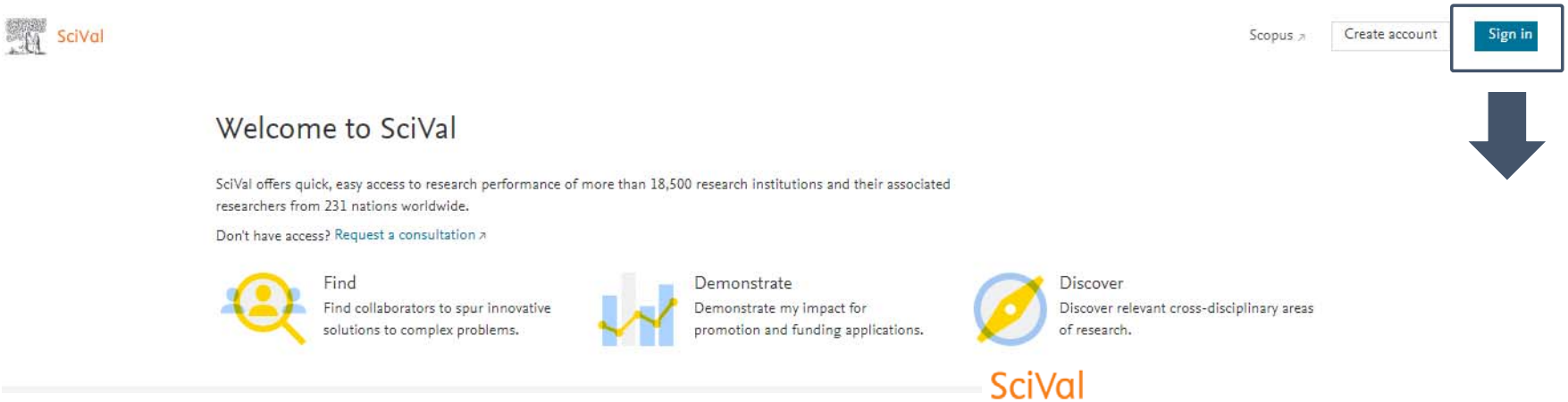
Calculating a Topic's Prominence combines three metrics which indicate the momentum of the Topic.

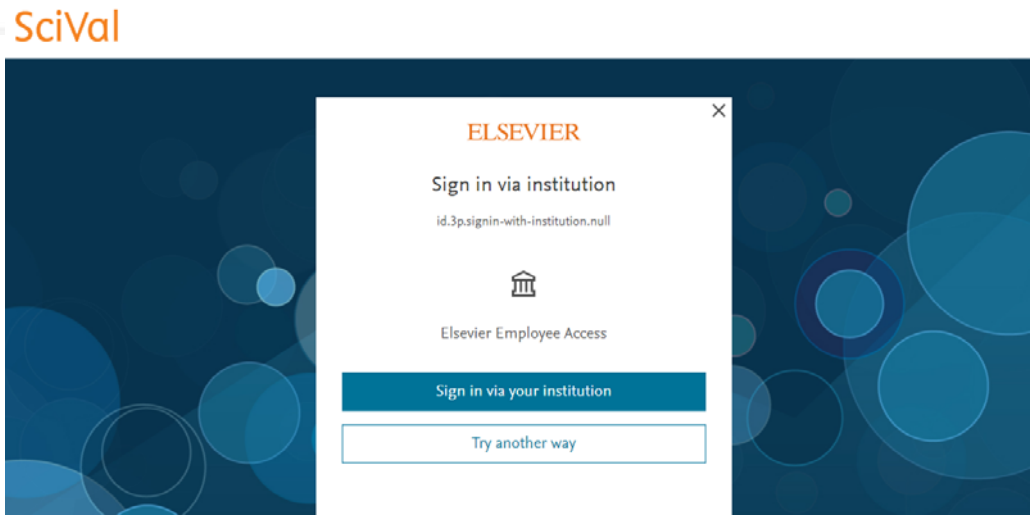
- Citation Count in year n to papers published in n and n-1
- Scopus View Count in year n to papers published in n and n-1
- Average Journal CiteScore for year n

Research Performance overview

To start– register & log in before use within University IP ranges

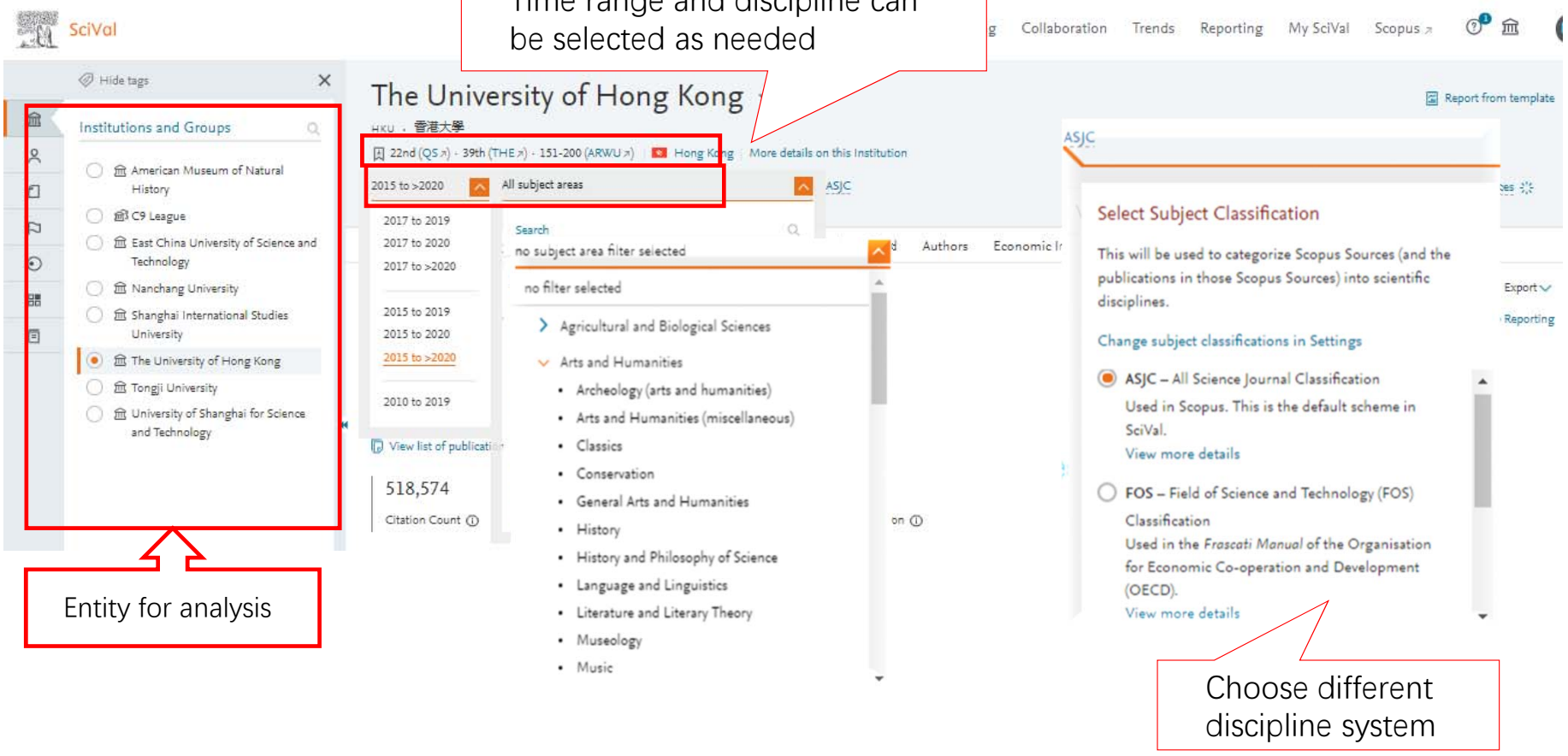
Share account with other Elsevier products, e.g. Scopus & SD





Research Performance Overview

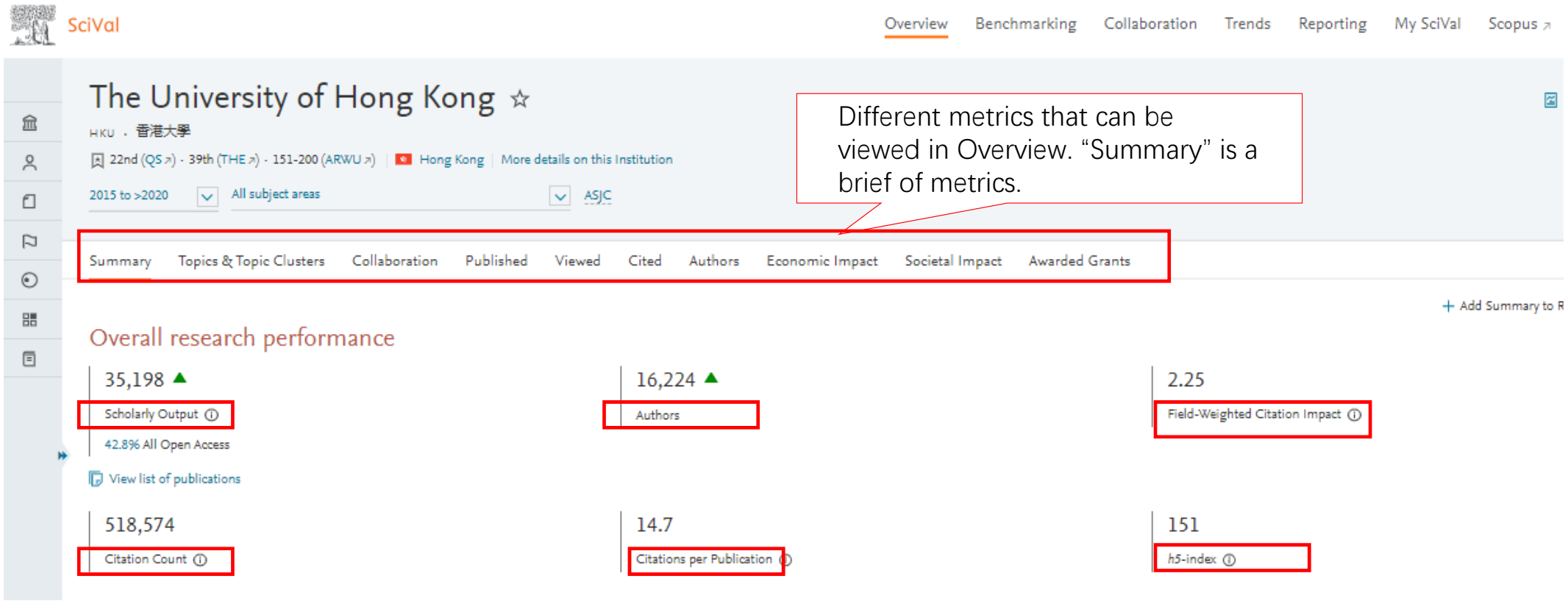
Understand overall research performance



Note: if in a certain module the entity is gray, it cannot be analyzed in that module

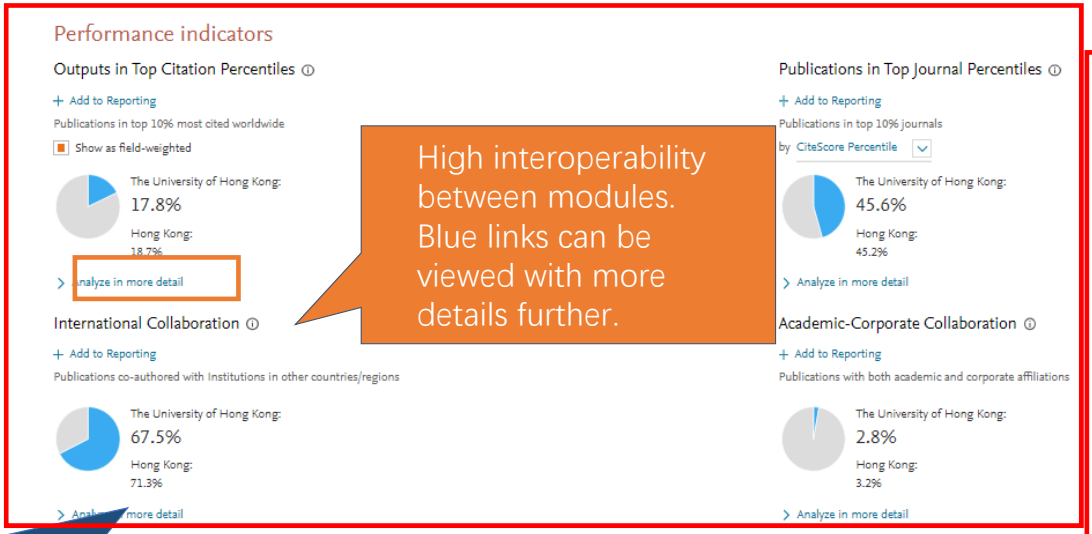
Research Performance Overview

Understand overall research performance



Research Performance Overview

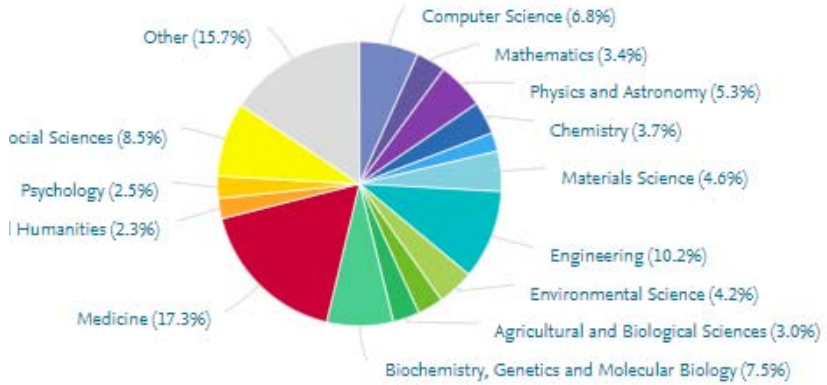
Understand overall research performance – metrics in “Summary” (partial)

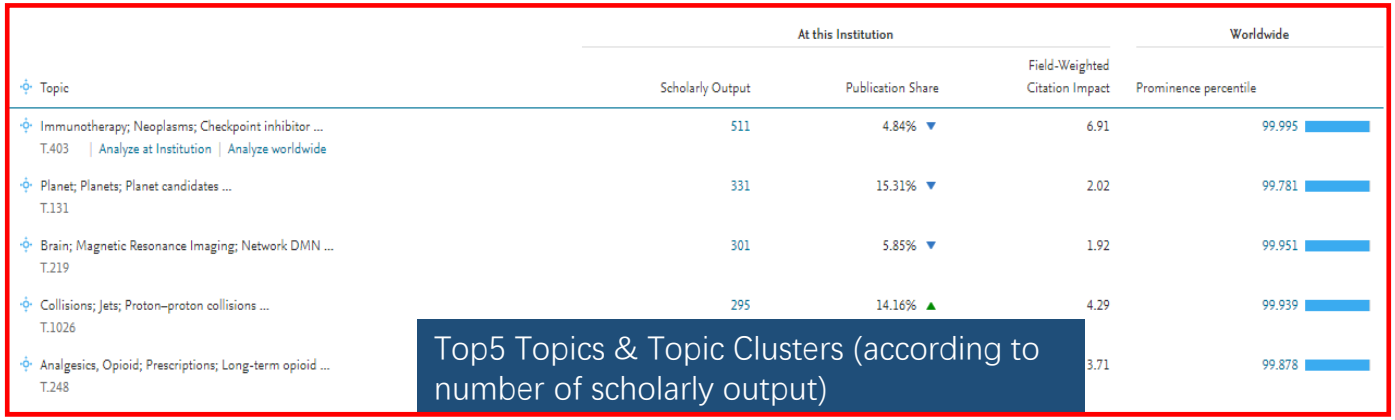


High interoperability between modules. Blue links can be viewed with more details further.

- Outputs in Top Citation Percentiles
- Publications in Top Journal Percentiles
- International Collaboration
- Academic-Corporate Collaboration

Disciplinary classification of scholar output

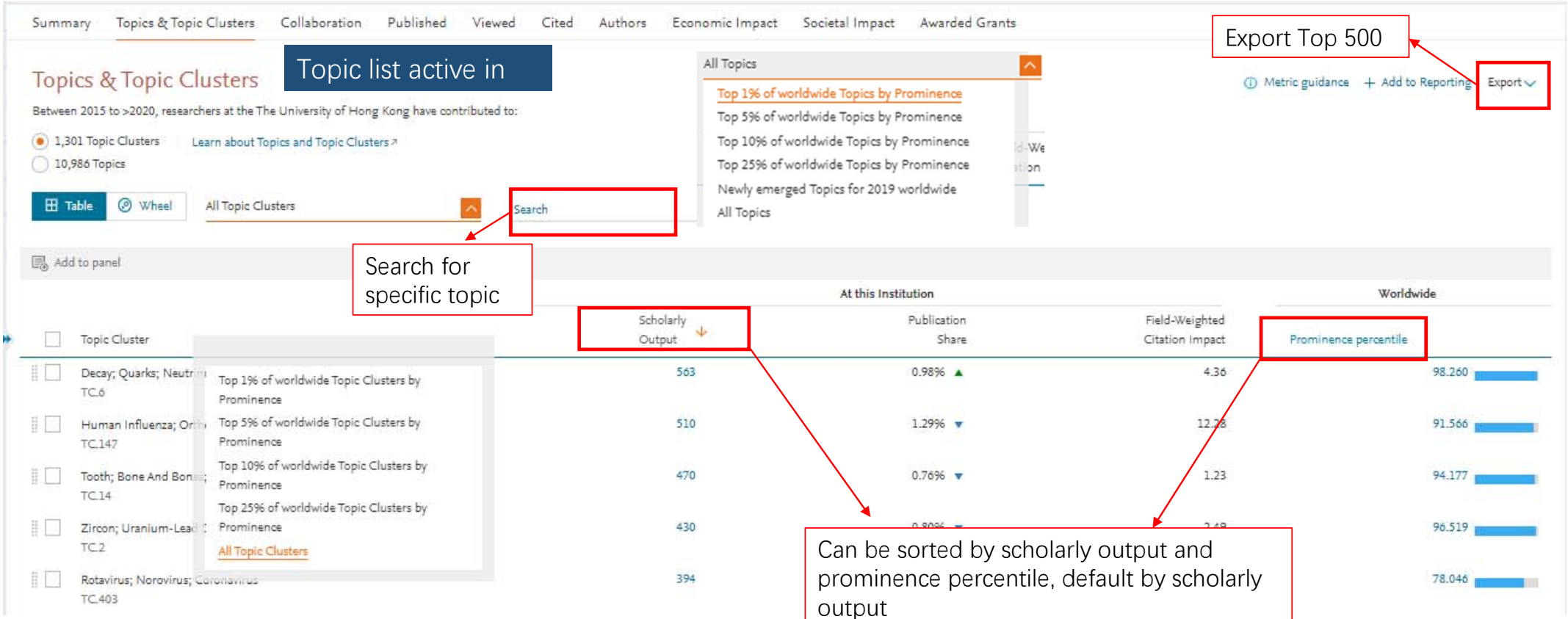




Top5 Topics & Topic Clusters (according to number of scholarly output)

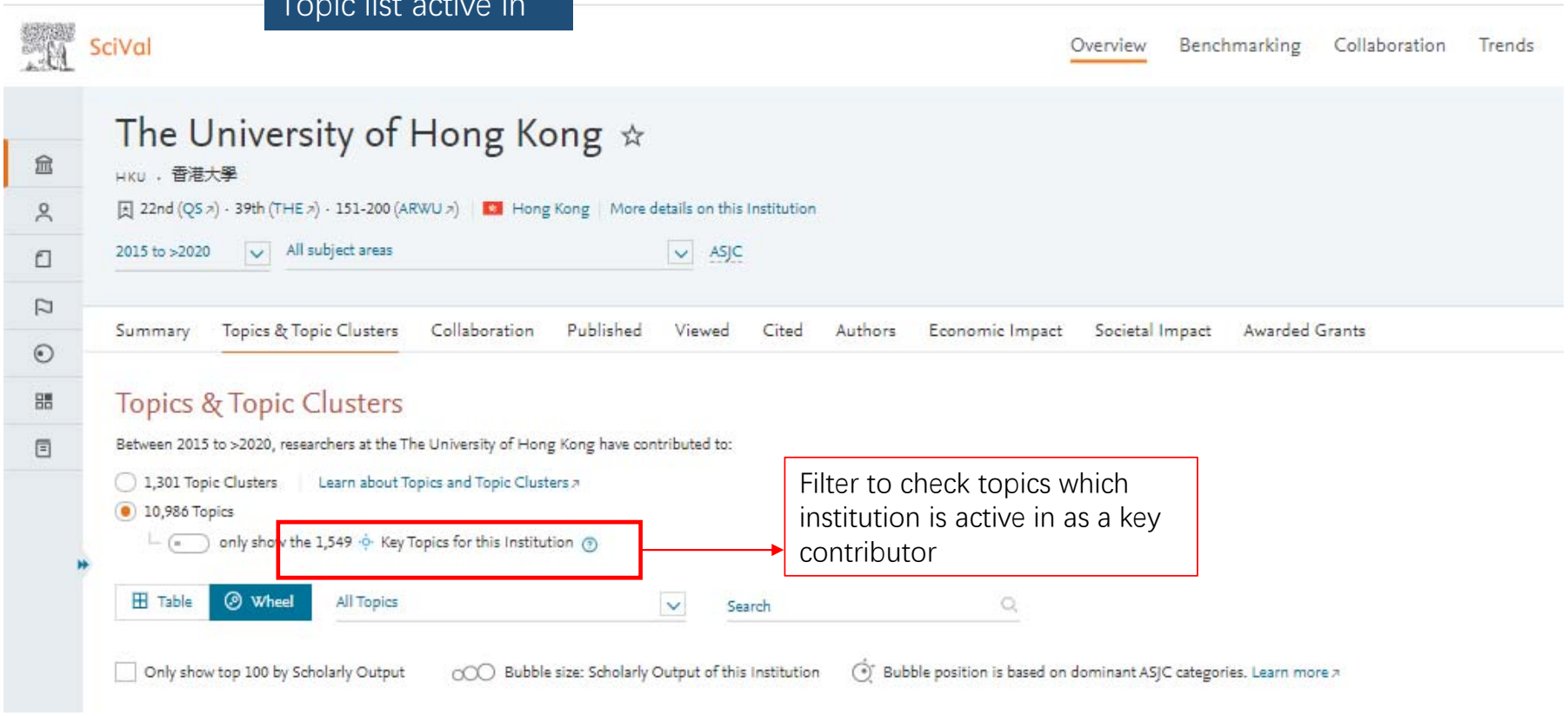
Research Performance Overview

Understand overall research performance – metrics: Topics & Topic Clusters



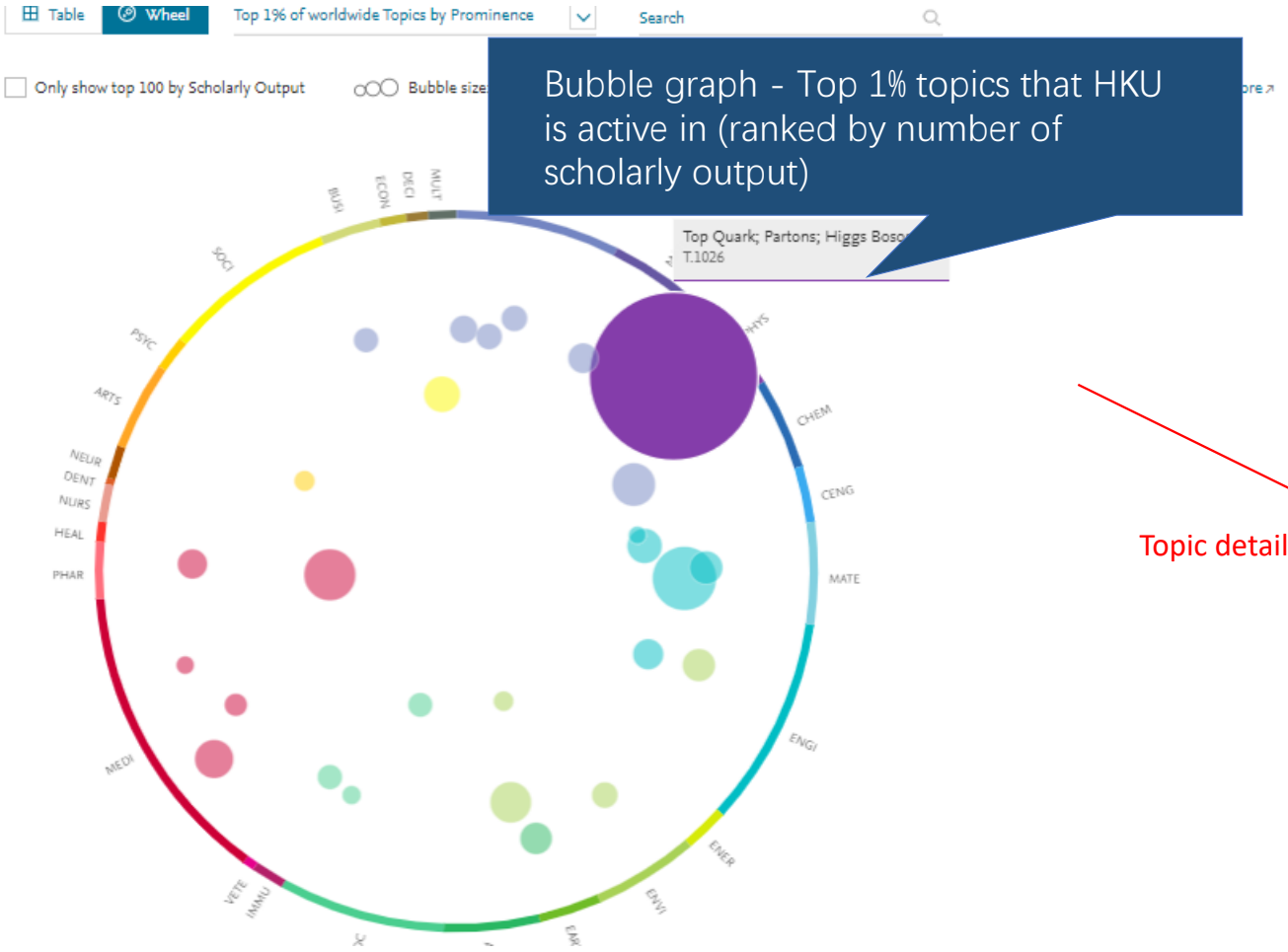
Research Performance Overview

Understand overall research performance – metrics: Topics & Topic Clusters

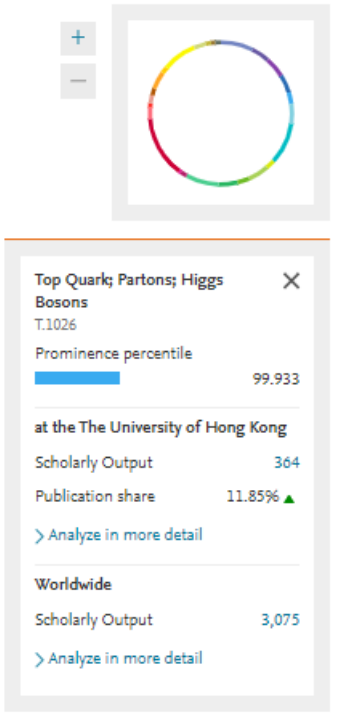


Research Performance Overview

Understand overall research performance – metrics: Topics & Topic Clusters



Topic details



Practice

1.Overview for USTC

timerange:2015-2020

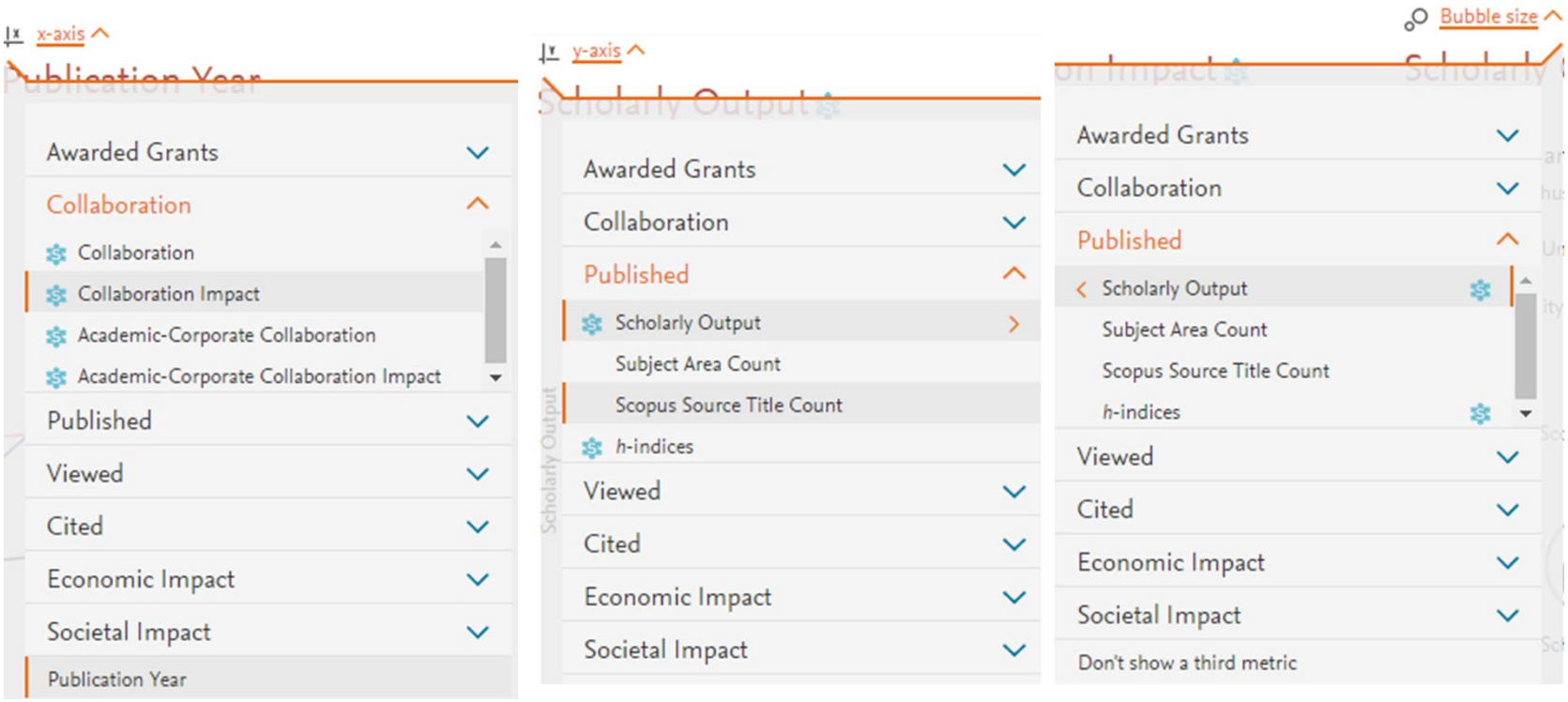
ASJC Subject: Engineering

2.Who are the top performing researchers and rising stars active in this subject?

3. Which forward-momentum Topics are our peers and competitors currently active in?

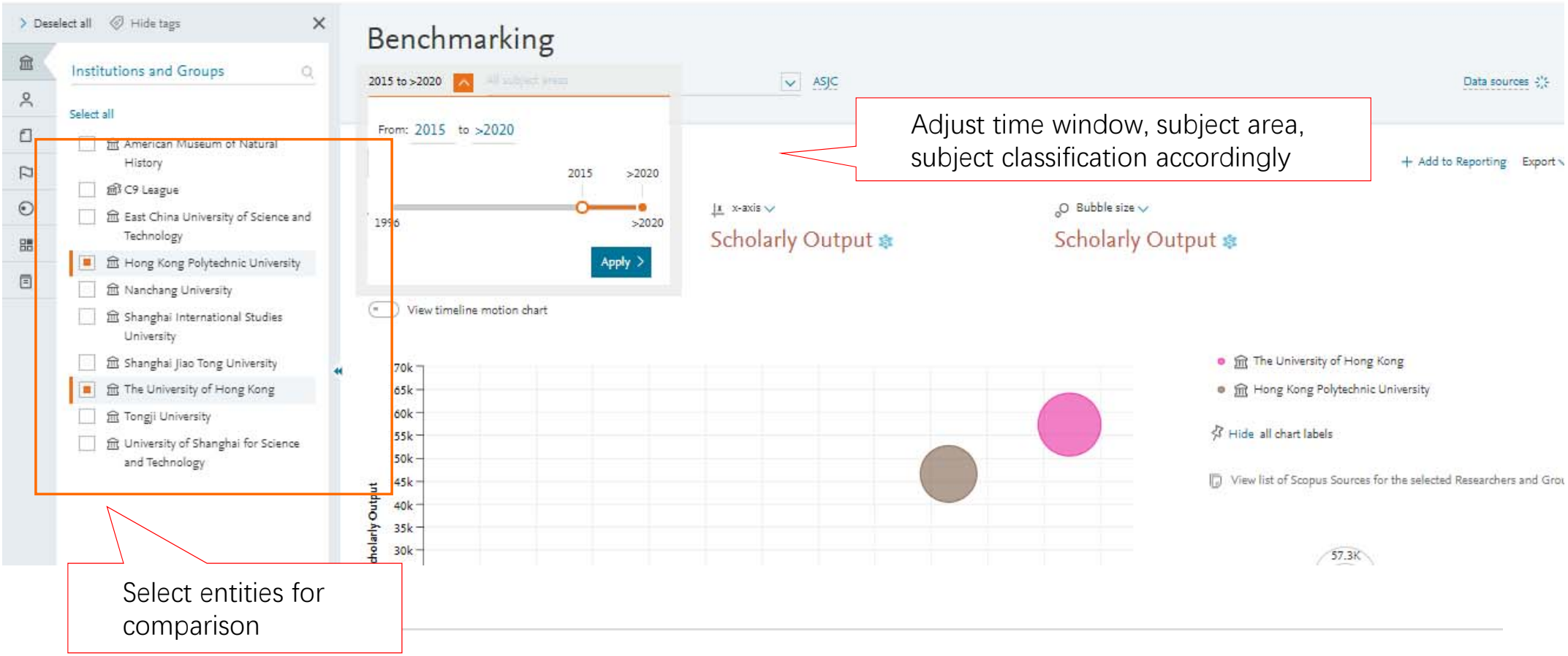
Tracking and benchmarking research performance

Benchmarking to know the stand



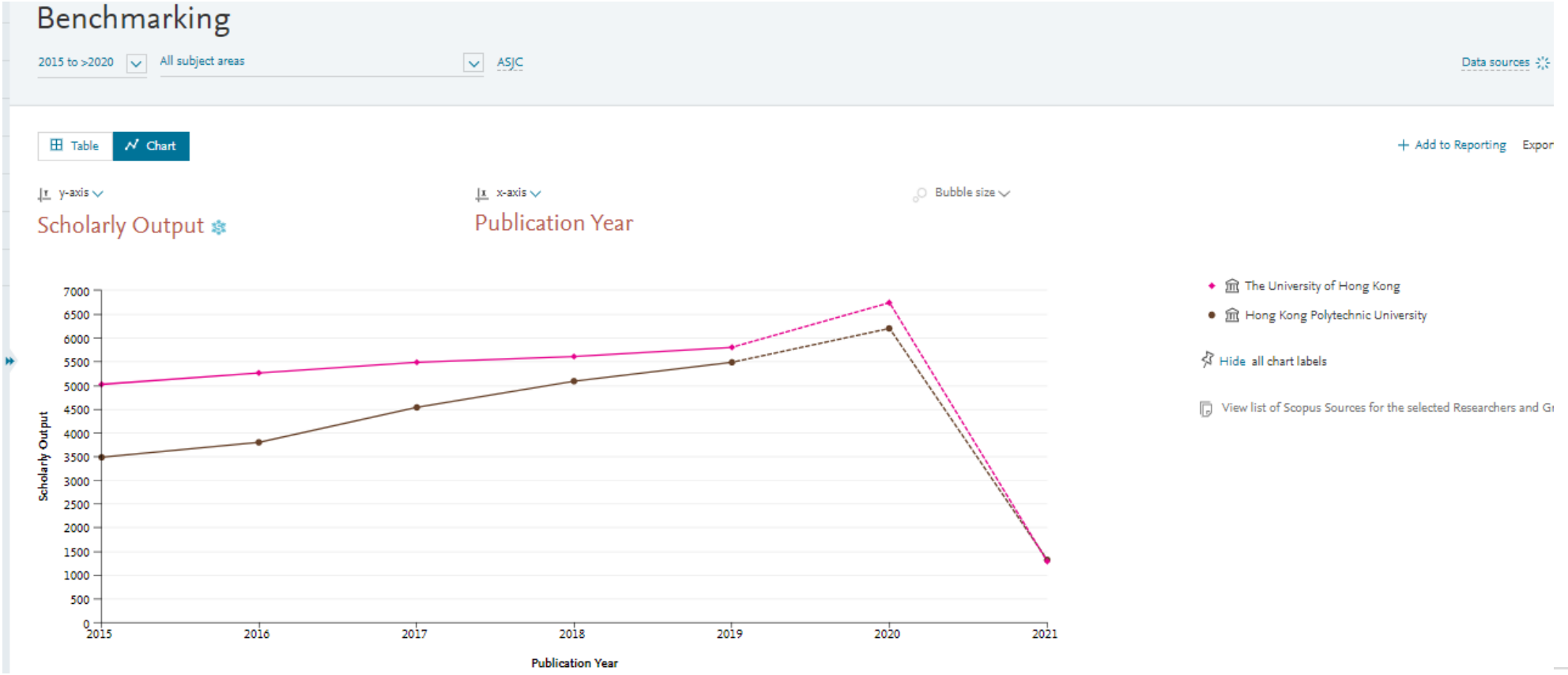
30+ metrics for reference

Benchmarking to know the stand



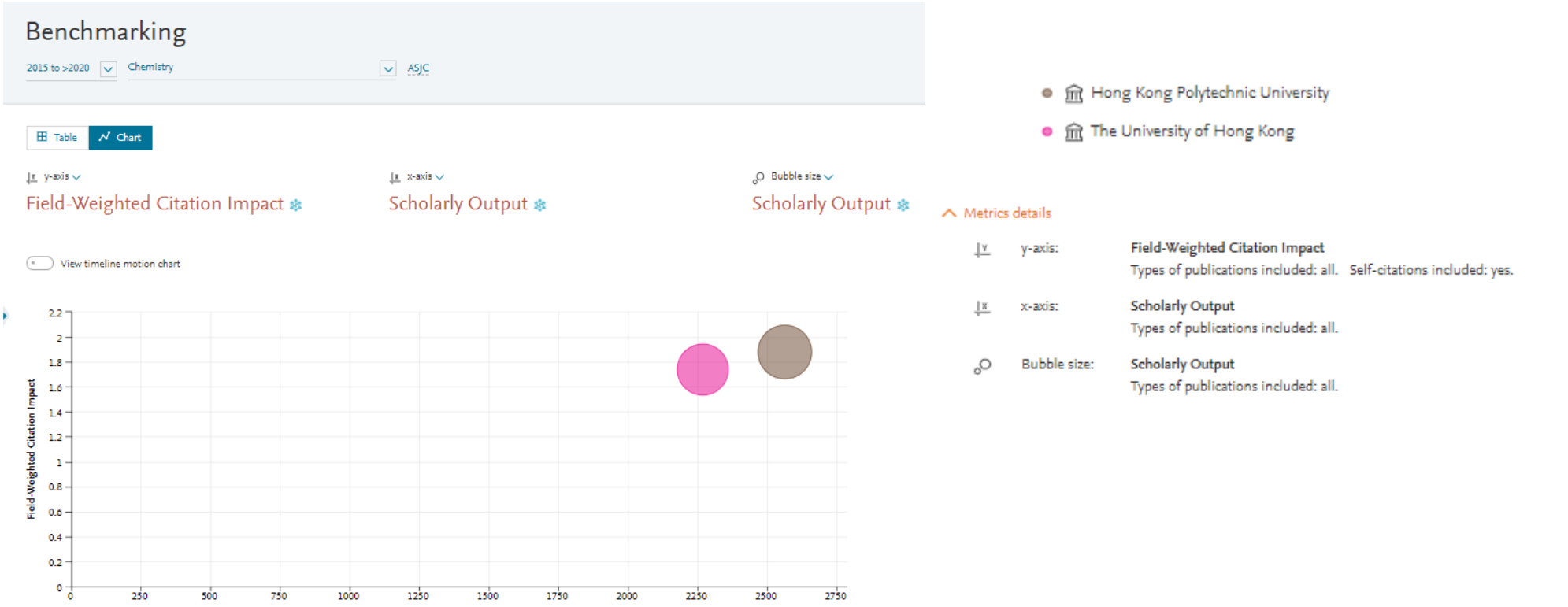
Benchmarking to know the stand

Know the stand as well as the trend



Benchmarking to know the stand

Research performance comparison within appointed time range



Benchmarking to know the stand

Create your own entities

- The analysis is based on the entity created in SciVal analysis.

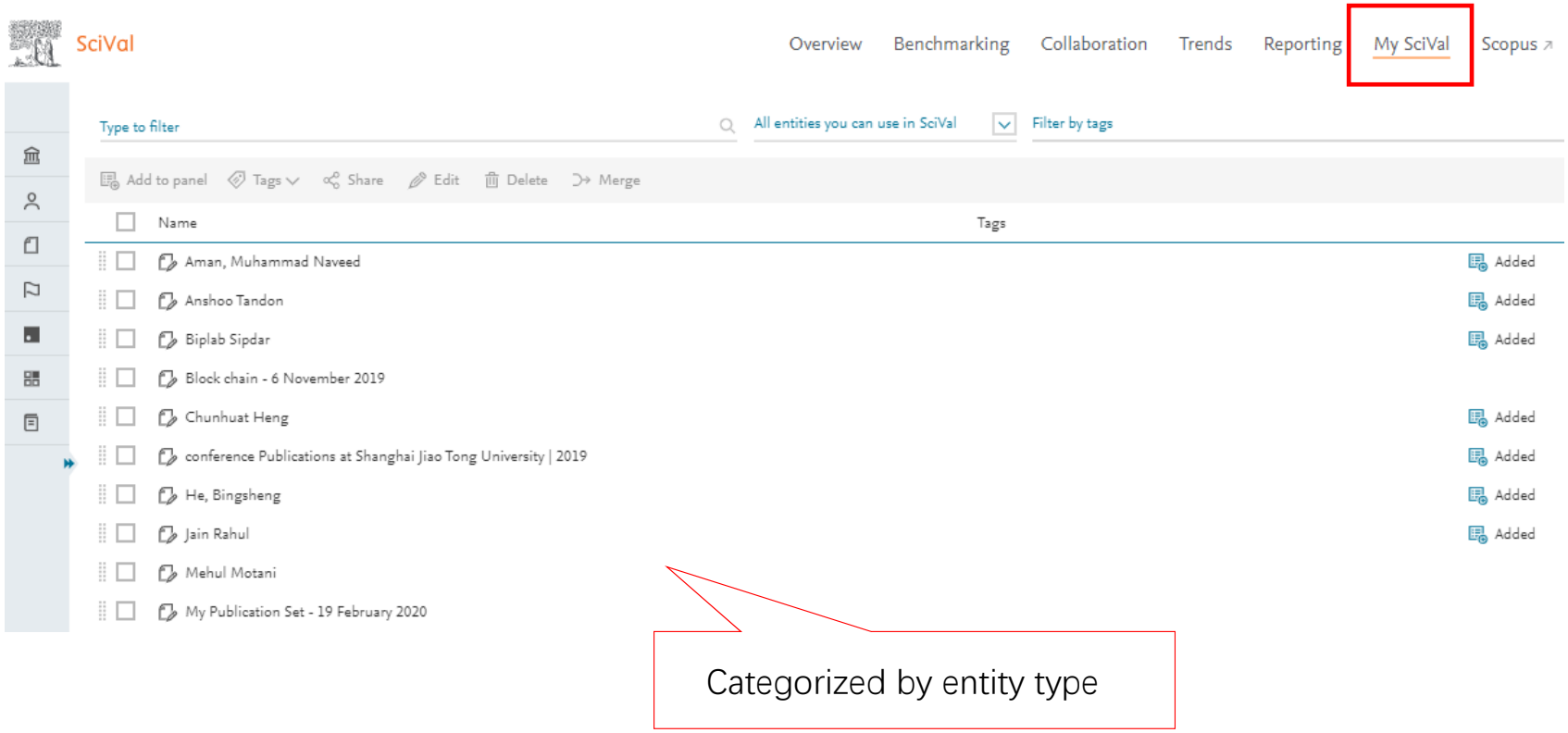
- Creating entities can have the following two ways:

✓Import pre-defined entities

✓Define your own entities: When the pre-defined entities in SciVal cannot meet the needs of analysis, you can create entities by yourself. This function makes the analysis more flexible and with a wider scope.

How to create entities in SciVal - My SciVal

Entities created can be viewed and edited in My SciVal



Analyzing research trends by Topics

Going beyond evaluation and benchmarking-Trends Module

…Help Researchers

Identify topics with high momentum and most likely **high funding success rates.**

Showcase that they are active in topics with high momentum.

Find the best potential co-authors in those topics.

Identify emerging & related topics with high momentum they should be aware of.

…Help Research managers

- Identify pockets of well funded research topics in research portfolio.
- Find the **top performers** and **rising stars** in those areas for recruitment, tenure and collaboration.
- **Showcase** that their institution is active in topics with high momentum
- **Identify which topics other universities** are active in that have high momentum.

Solution

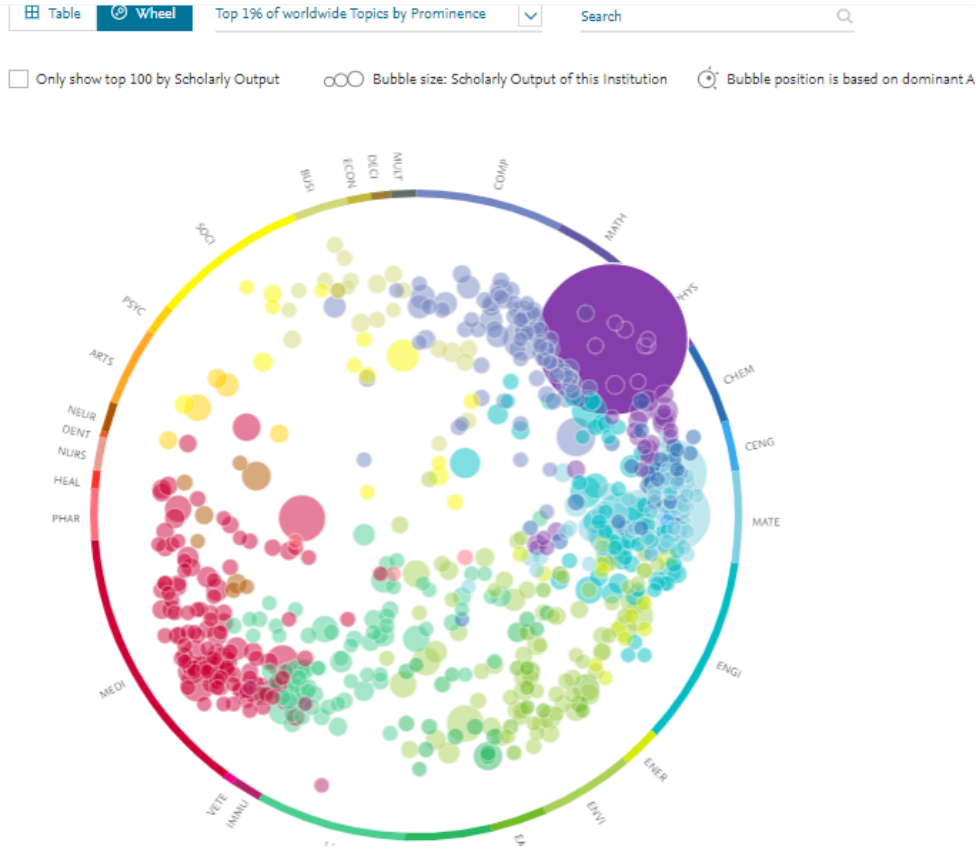
- We have identified ~97.000 global research topics by clustering all of Scopus and ranked them by Prominence.
- Prominence is a new indicator that shows the current momentum of a topic by looking at very recent citations, views and CiteScore values.
- Prominence = momentum (not the same as importance!).
- Prominence predicts funding – helps researchers and research managers identify topics in which funding will increase.
- Going way beyond what the competition can do…

Prominence combines 3 metrics to indicate the momentum of the topic

Citation Count in year
Scopus **Views Count**
Average **CiteScore**

Analyzing research trends by Topics

Identify 1% of worldwide Topics by Prominence

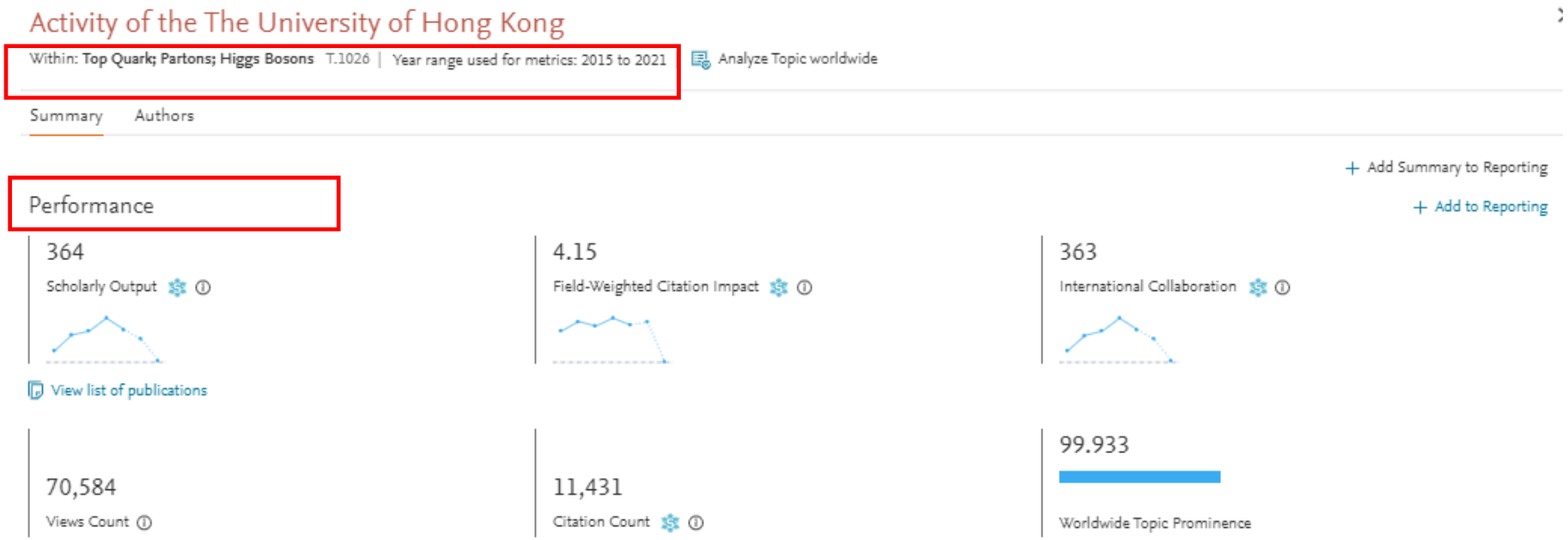


Top Quark; Partons; Higgs Bosons
T.1026
Prominence percentile
99.933
at the The University of Hong Kong
Scholarly Output 364
Publication share 11.85%
> Analyze in more detail
Worldwide
Scholarly Output 3,075
> Analyze in more detail

Check within HKU

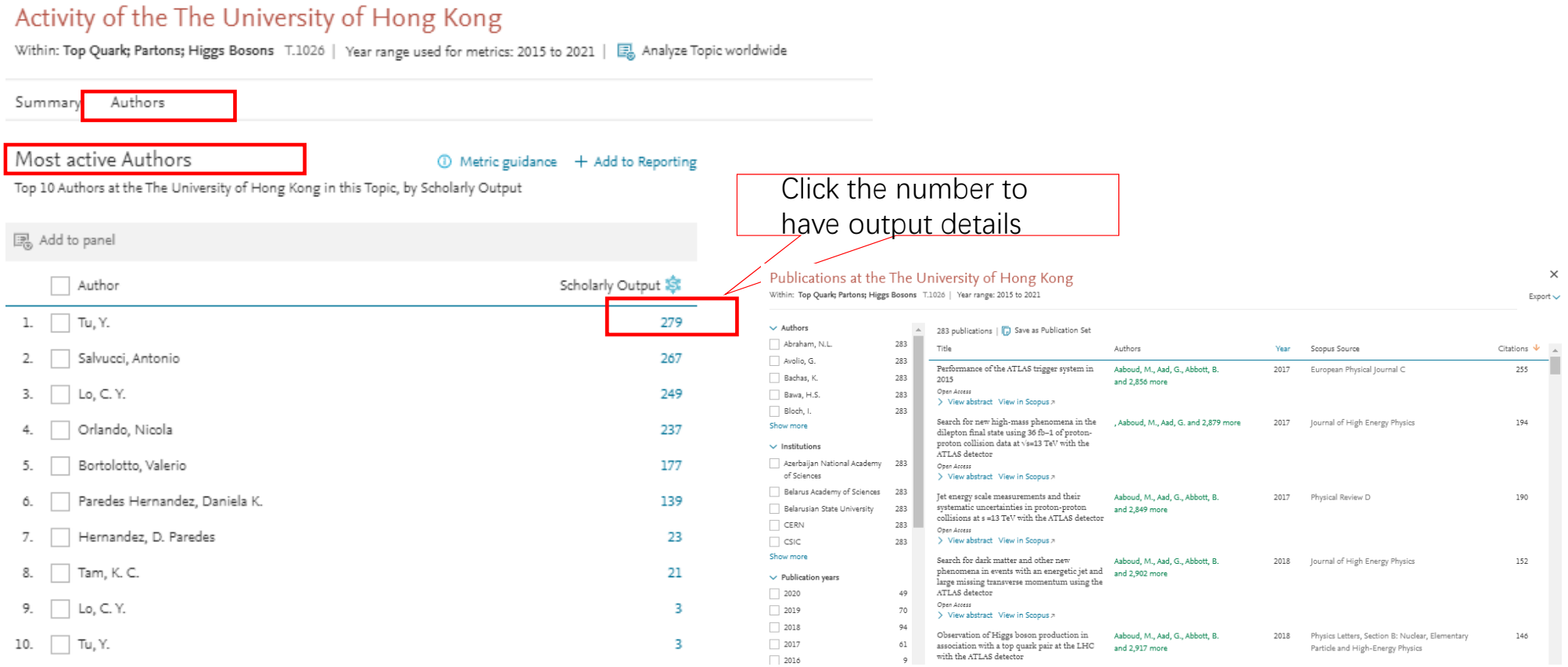
Analyzing research trends by Topics

Analyze more detail in HKU



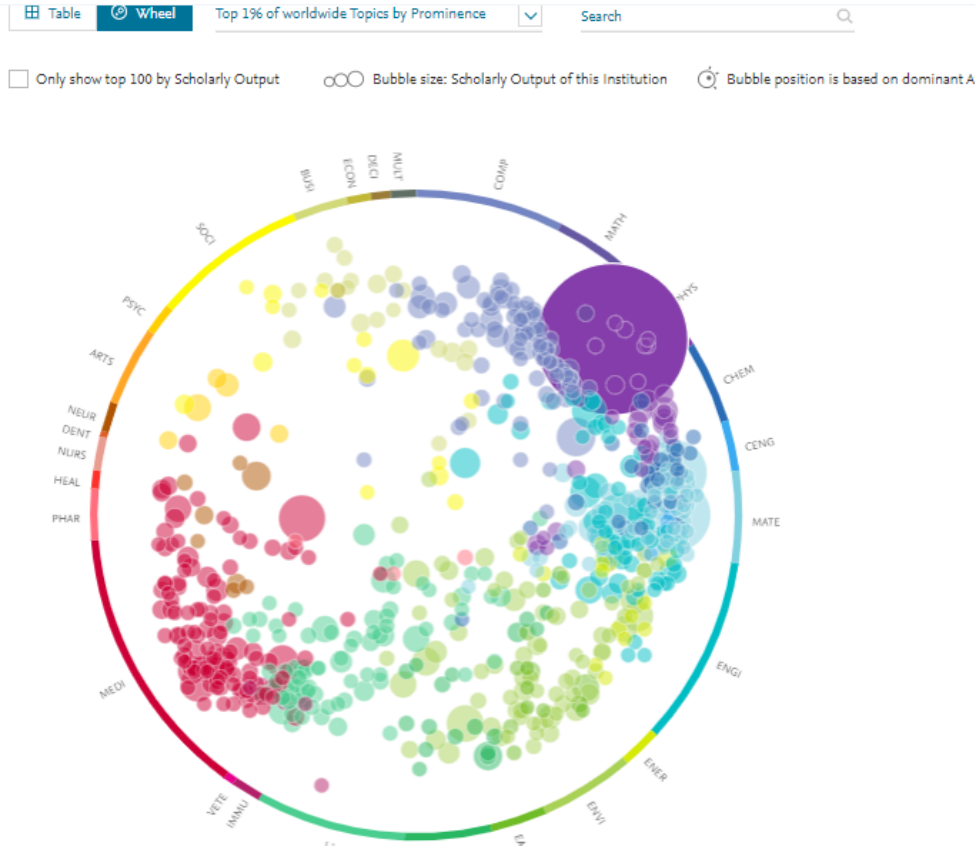
Analyzing research trends by Topics

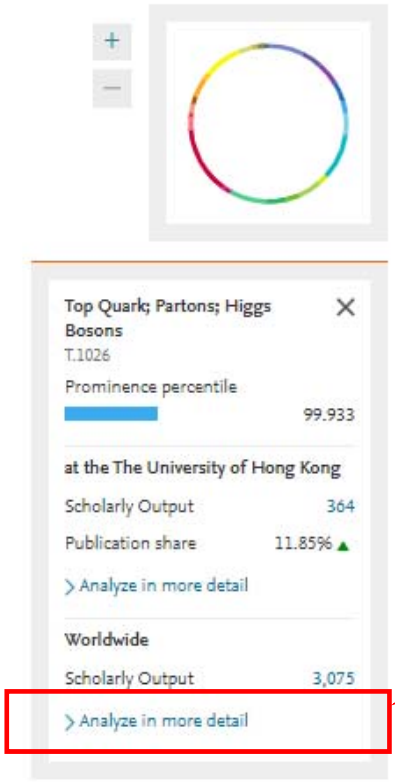
Analyze more detail in HKU-Identify top 10 authors in this Topic by Scholarly Output



Analyzing research trends by Topics

Identify 1% of worldwide Topics by Prominence

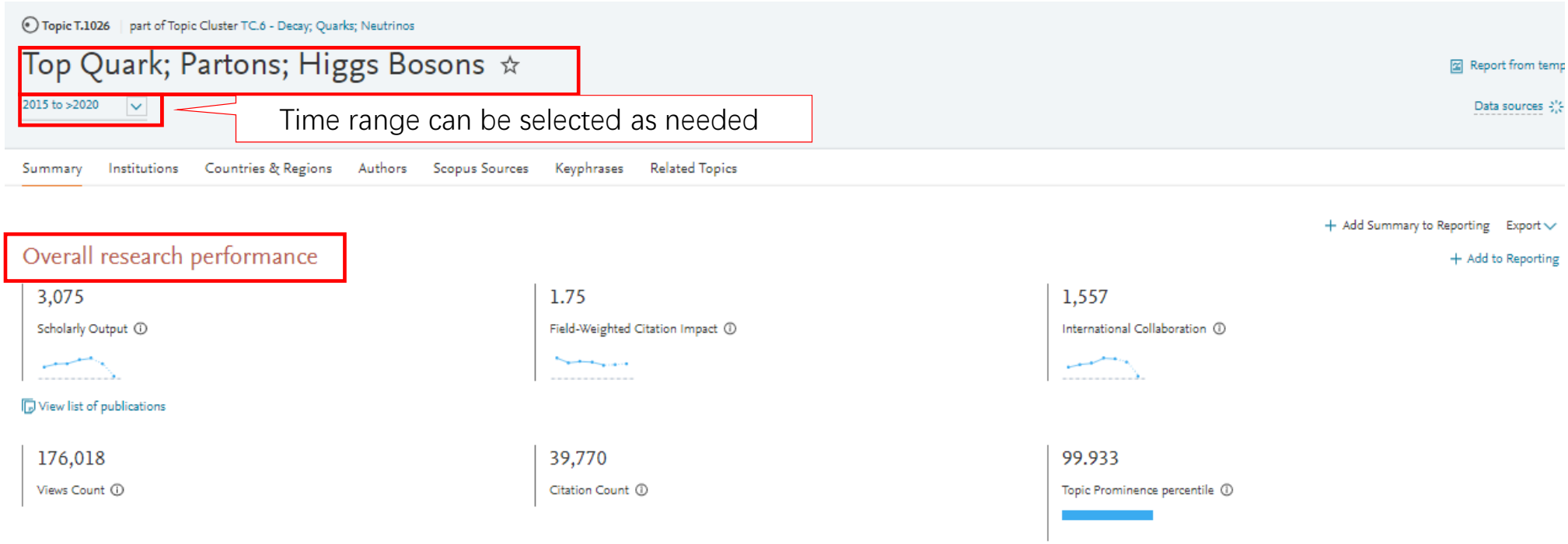




Check from a global perspective

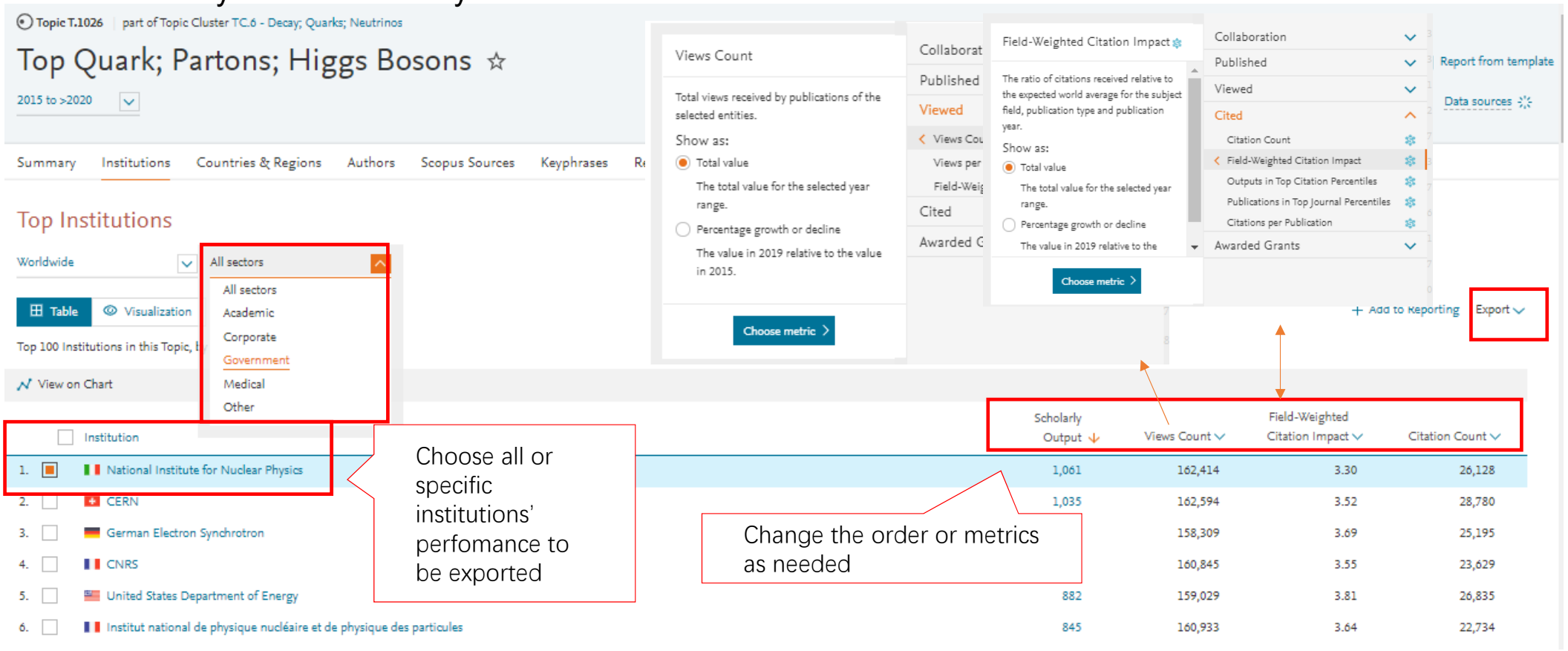
Analyzing research trends by Topics

Analyze more detail worldwide



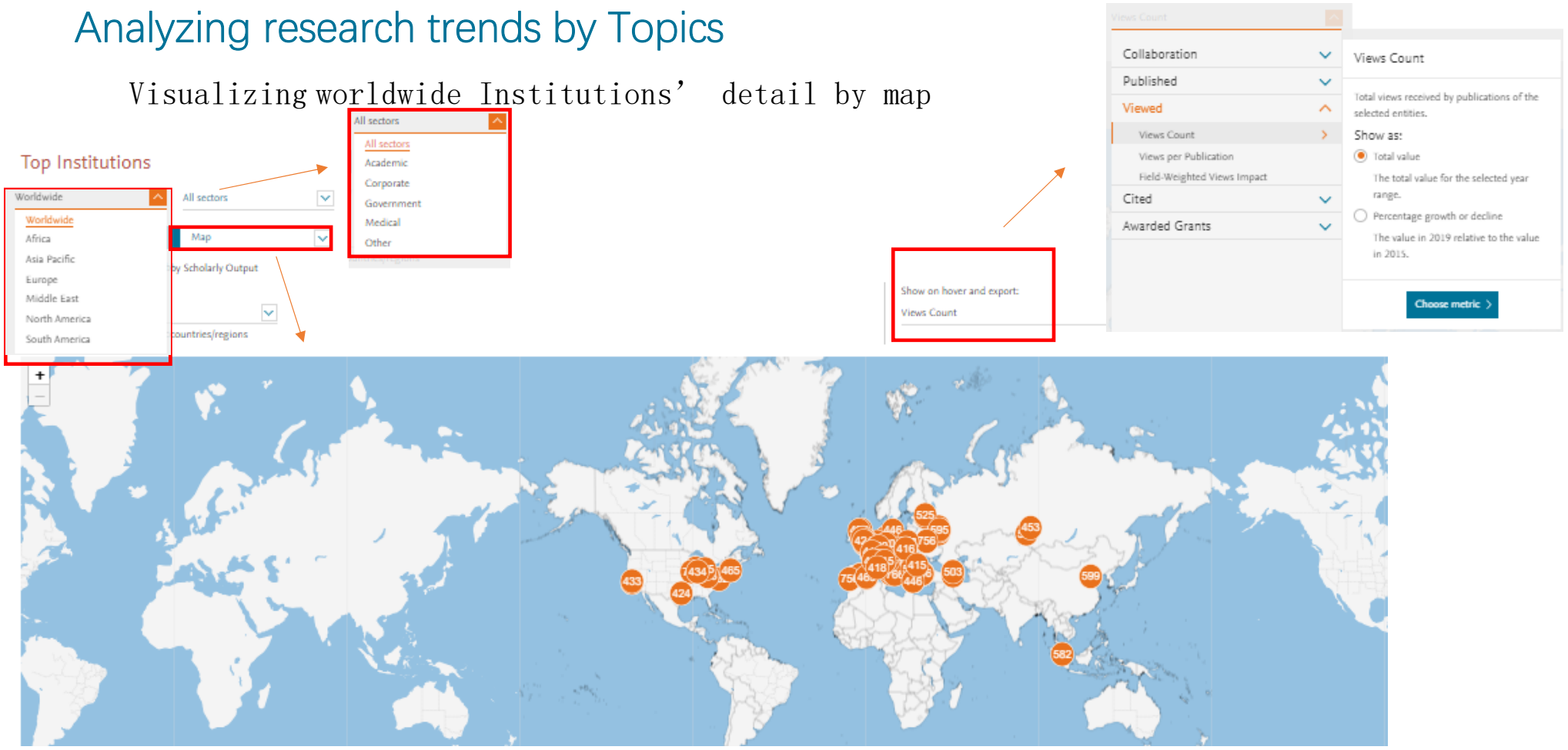
Analyzing research trends by Topics

Analyze more detail by Institutions worldwide



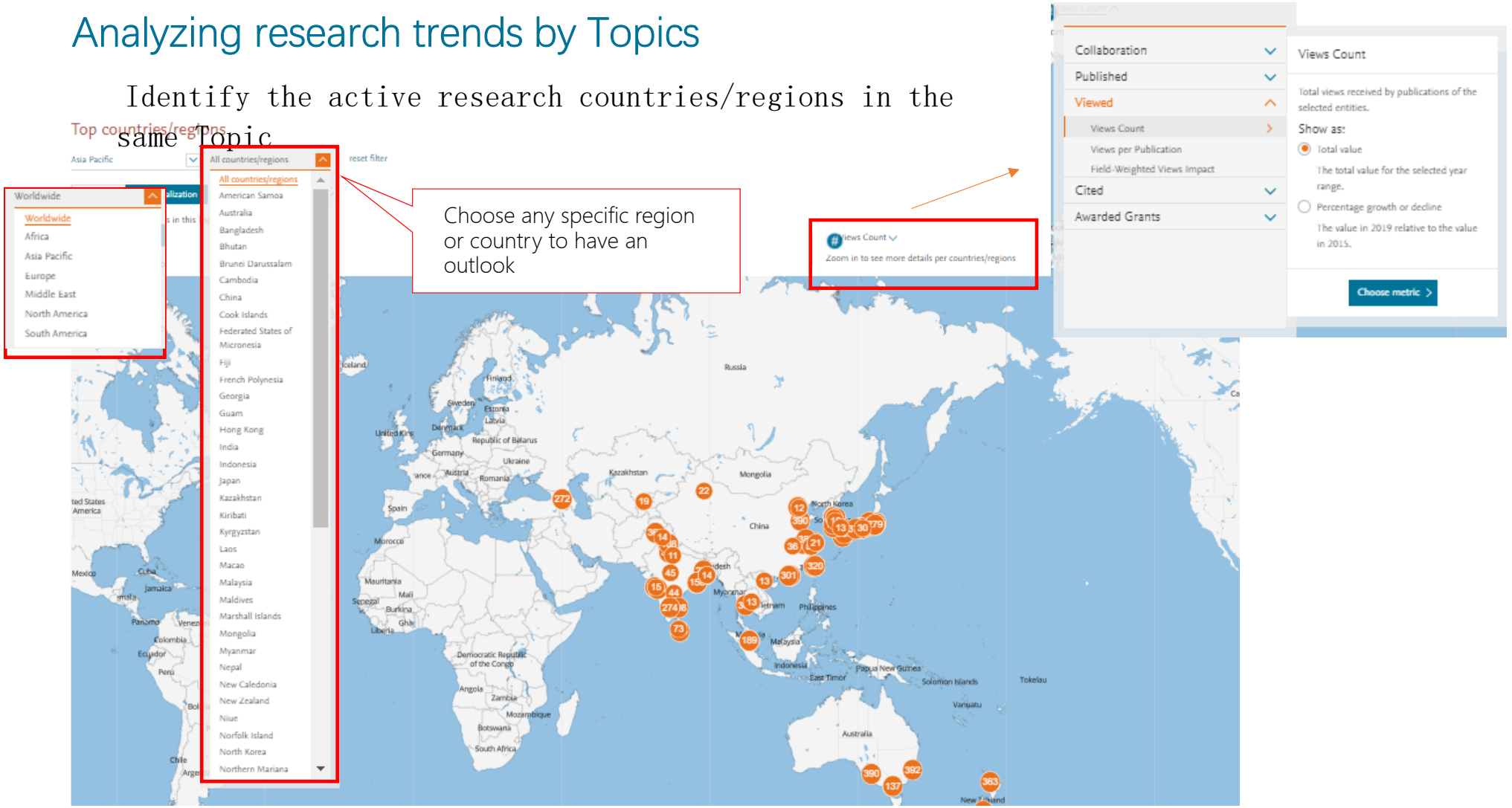
Analyzing research trends by Topics

Visualizing worldwide Institutions' detail by map



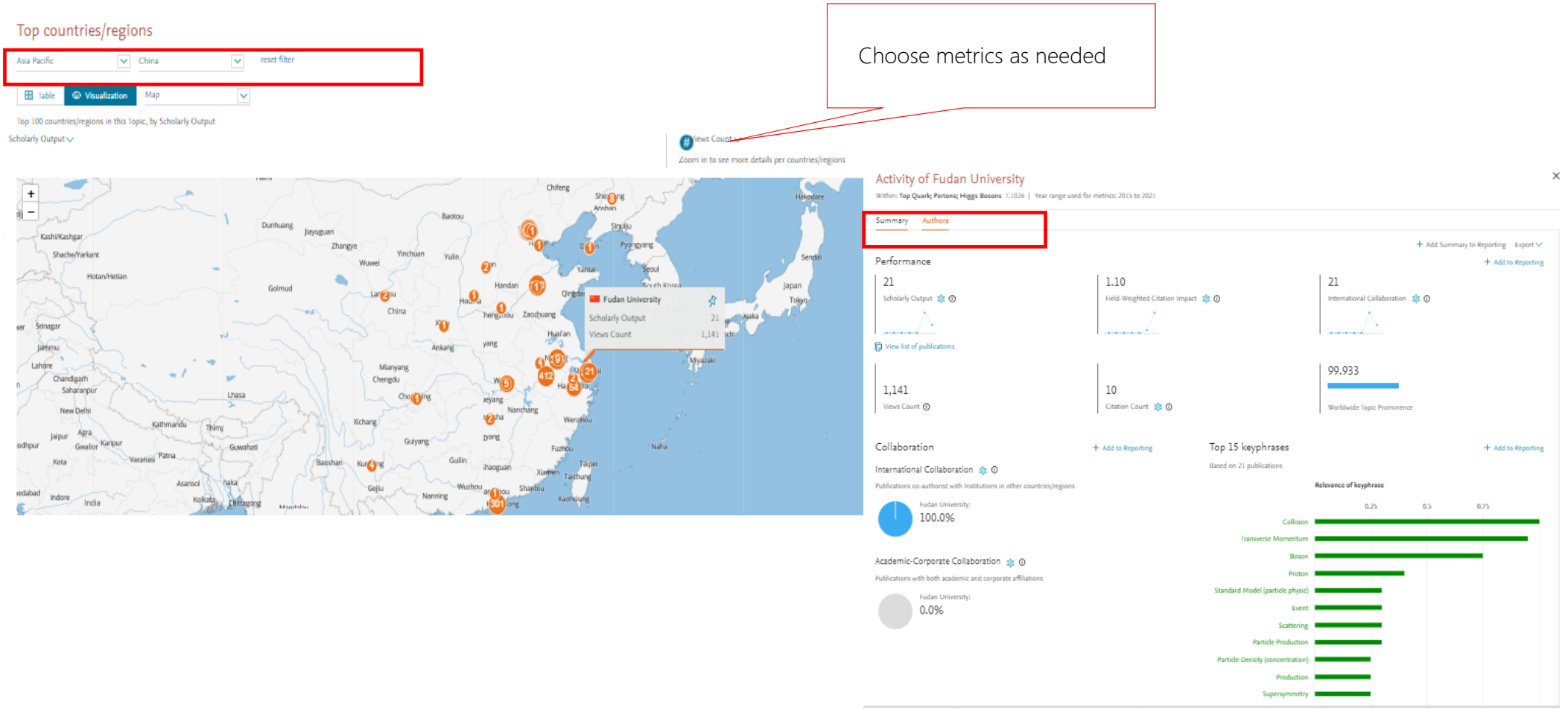
Analyzing research trends by Topics

Identify the active research countries/regions in the same topic



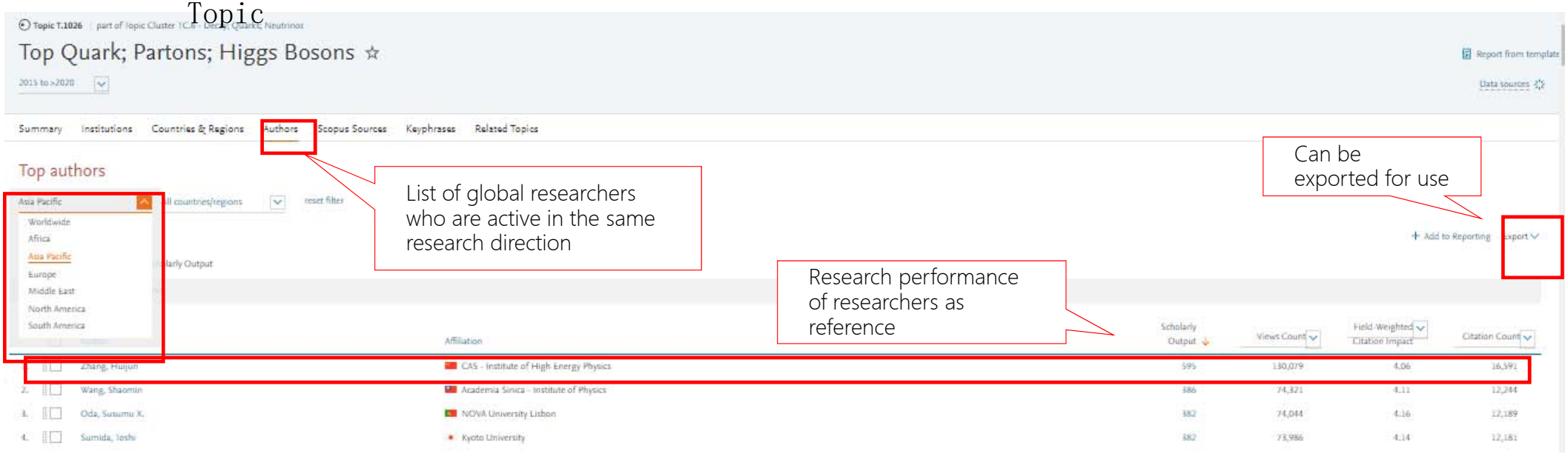
Analyzing research trends by Topics

Have an overview of potential collaborative institution



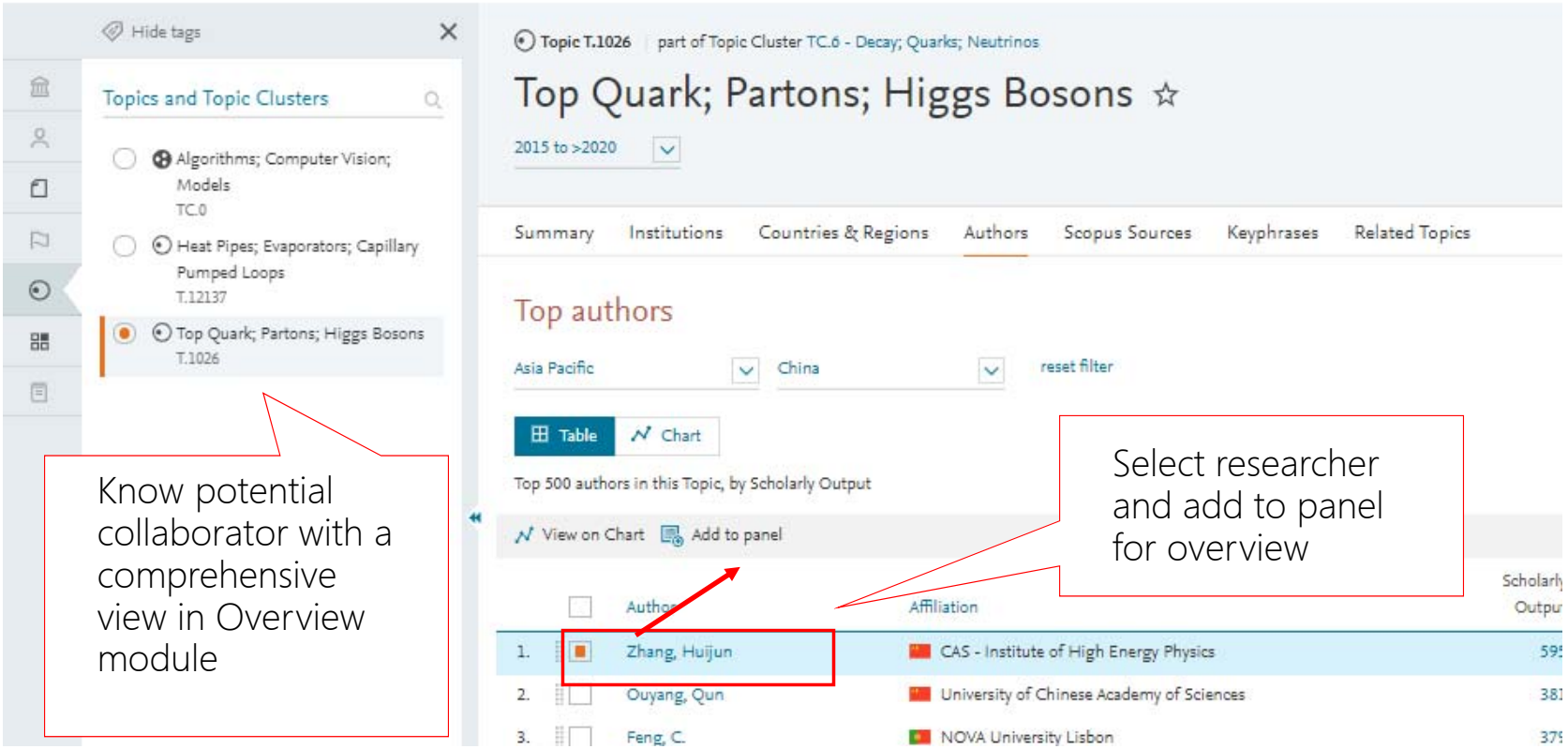
Analyzing research trends by Topics

Identify the most active researchers in the same Topic



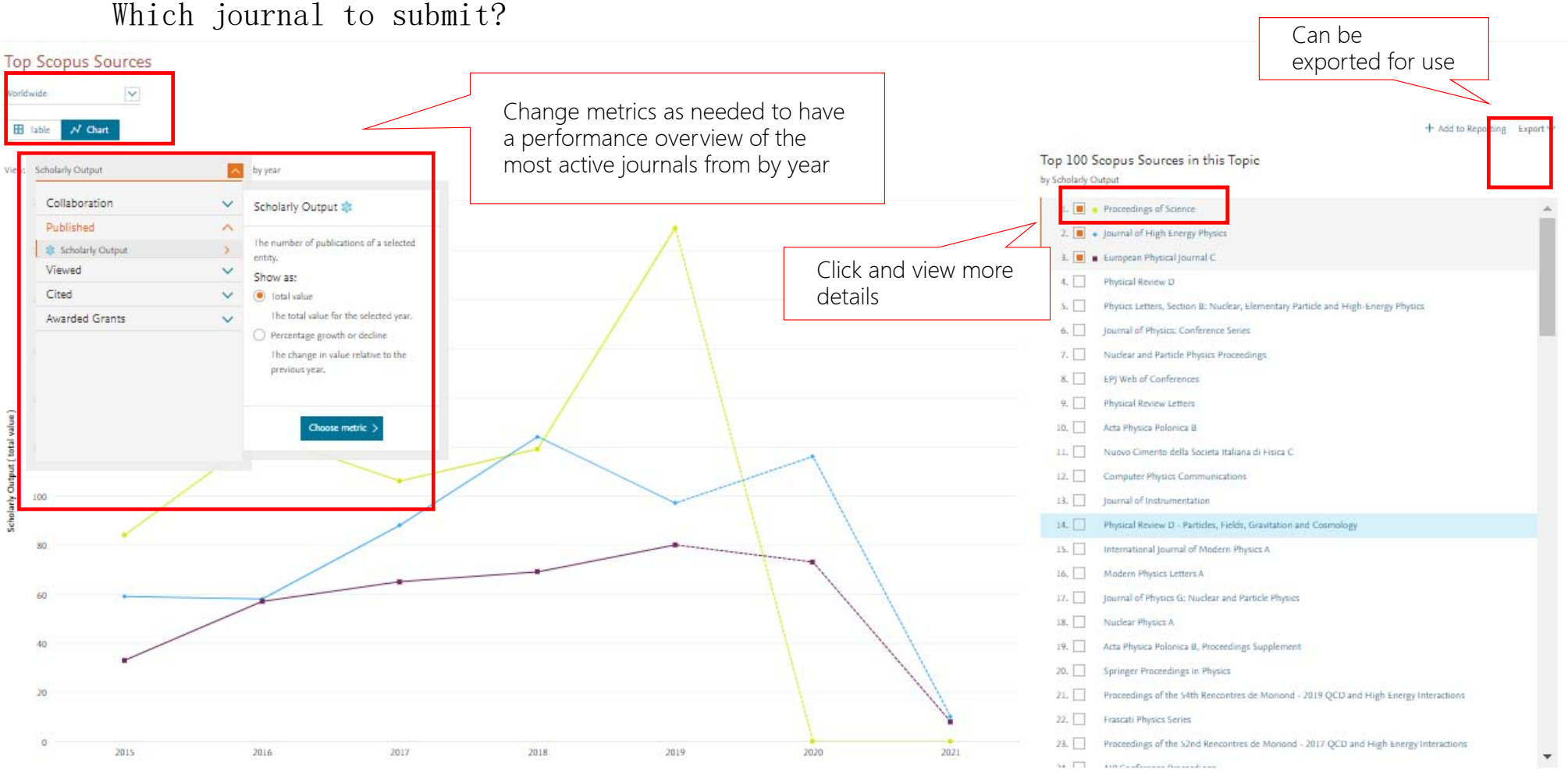
Analyzing research trends by Topics

Make use of topics to identify potential collaborator



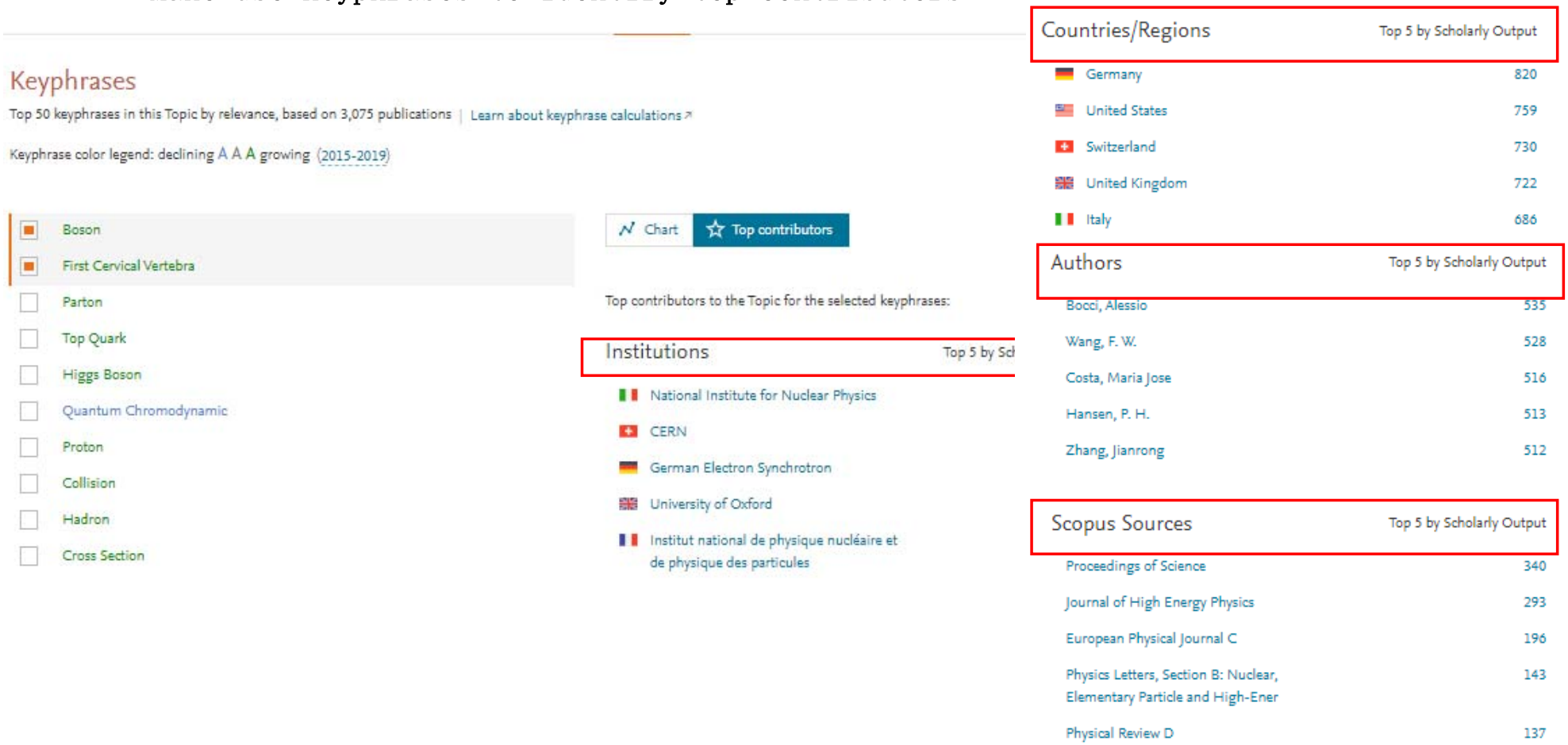
Analyzing research trends by Topics

Which journal to submit?



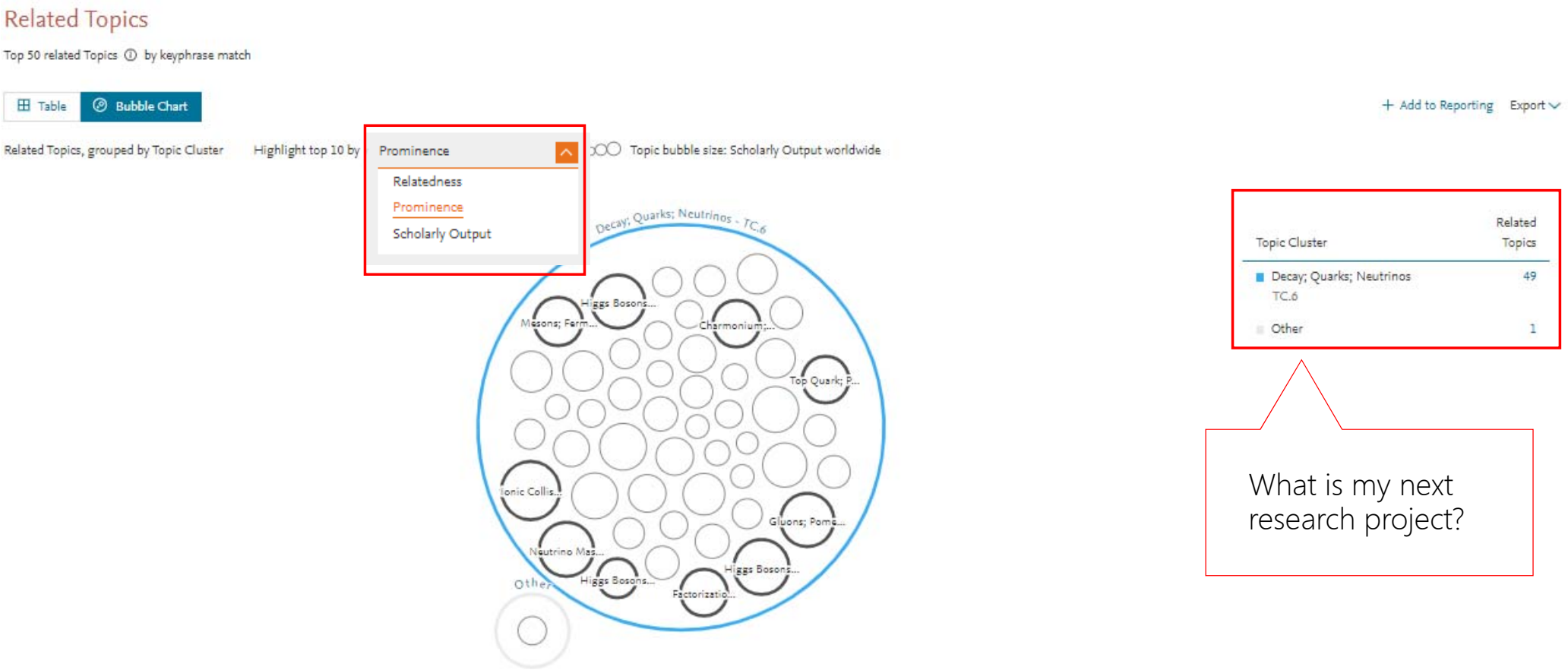
Analyzing research trends by Topics

Make use Keyphrases to identify top contributors



Analyzing research trends by Topics

Make use of Related Topics to identify the research trend



Summary and Review

- View the research performance of individual researchers & researcher groups
- Compare research performance to know the stand
- Identify potential collaborators via Topics

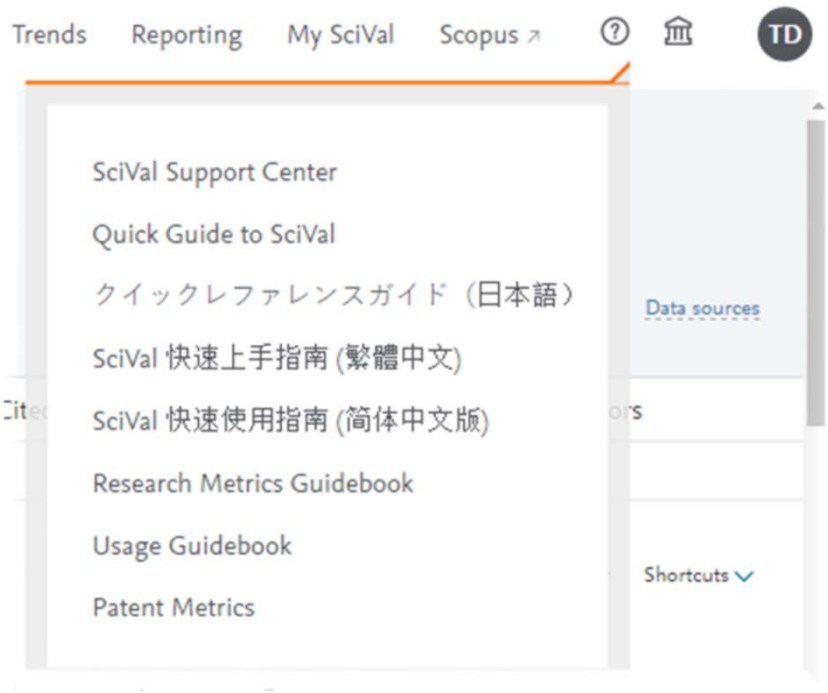
Practice

Time Range:2015-2020
Subject: Engineering-ASJC
Benchmark: University of Science and Technology of China
Shanghai Jiaotong University
Hefei University of Technology
One with your own interest
Identify : Which Institution’s FWCI is the highest one in 2020?
Further research: the most active author ane check his/her Scopus author profile

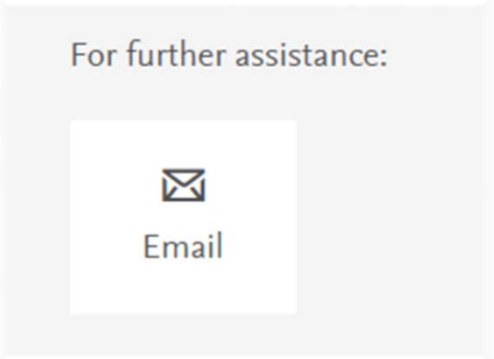
Need help?

SciVal Support Center

https://service.elsevier.com/app/home/supporthub/scival/



If you can not find an answer in support center, please email us with your question.



Thank You

Fianna Hua
Research Intelligence Elsevier
Fianna.hua@elsevier.com

Appendix

How to create entities in SciVal

How to create entities in SciVal – why important?

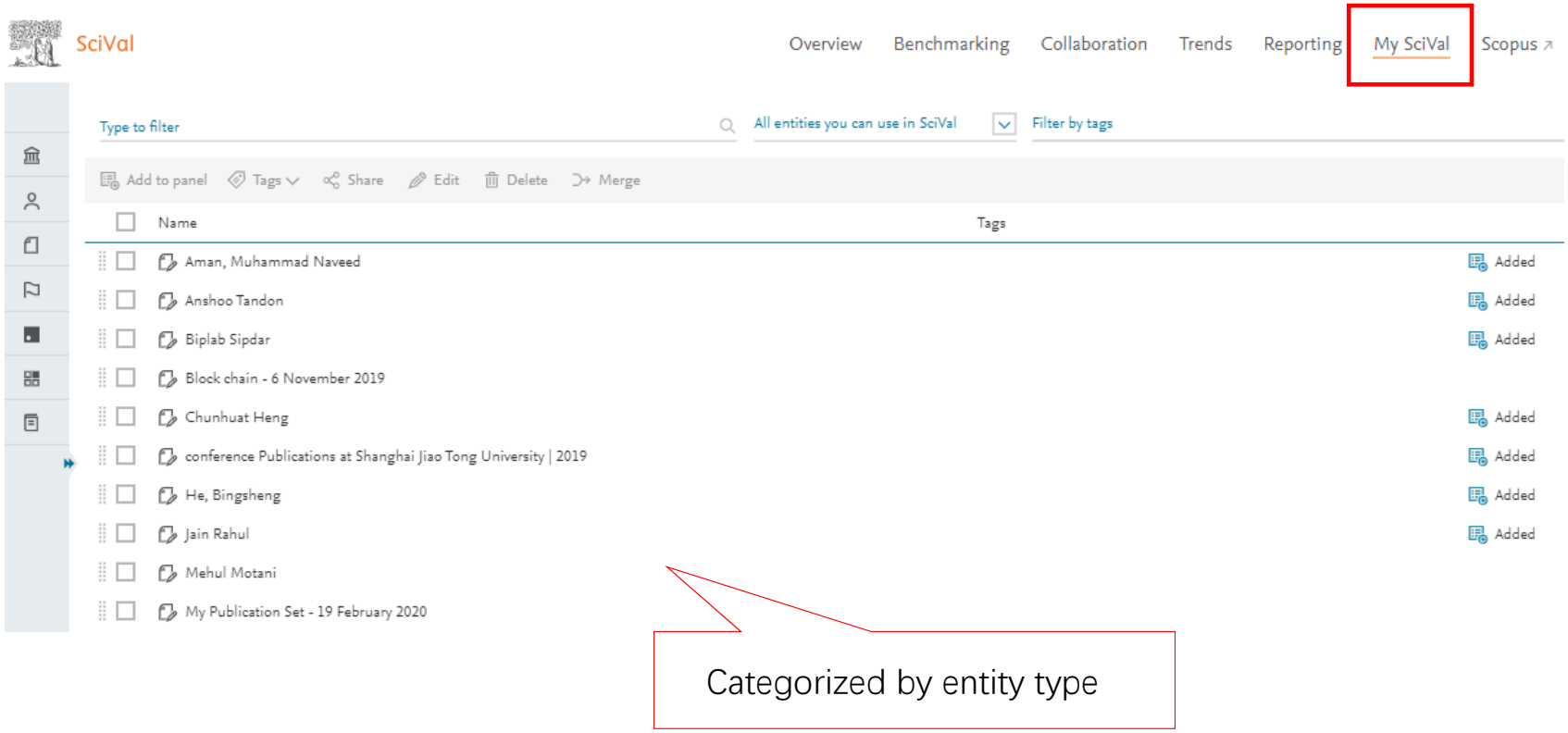
- The analysis is based on the entity created in SciVal analysis.
- Creating entities can have the following two ways:

✓Import pre-defined entities

✓Define your own entities: When the pre-defined entities in SciVal cannot meet the needs of analysis, you can create entities by yourself. This function makes the analysis more flexible and with a wider scope.

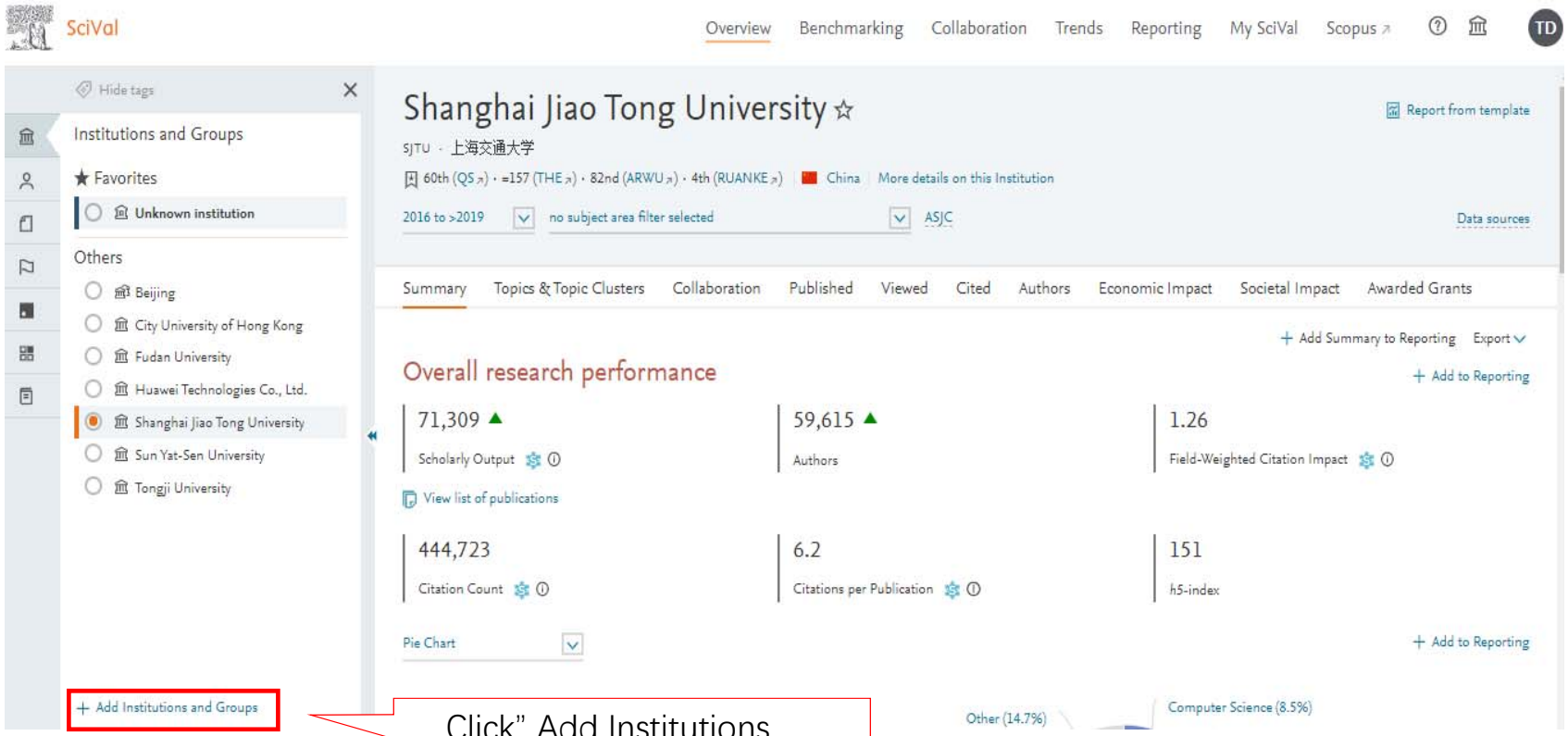
How to create entities in SciVal - My SciVal

Entities created can be viewed and edited in My SciVal



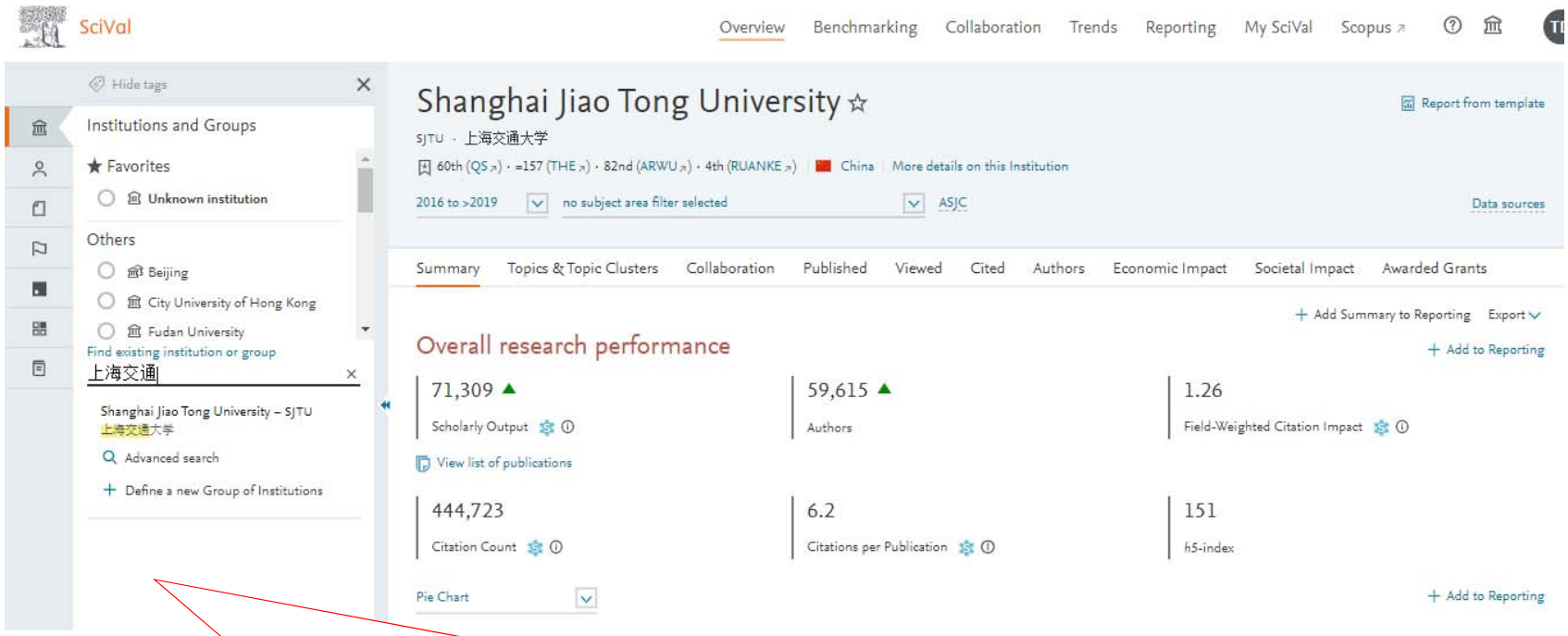
How to create entities in SciVal - Institutions and Groups

✓ Create Institutions and Groups



How to create entities in SciVal - Institutions and Groups

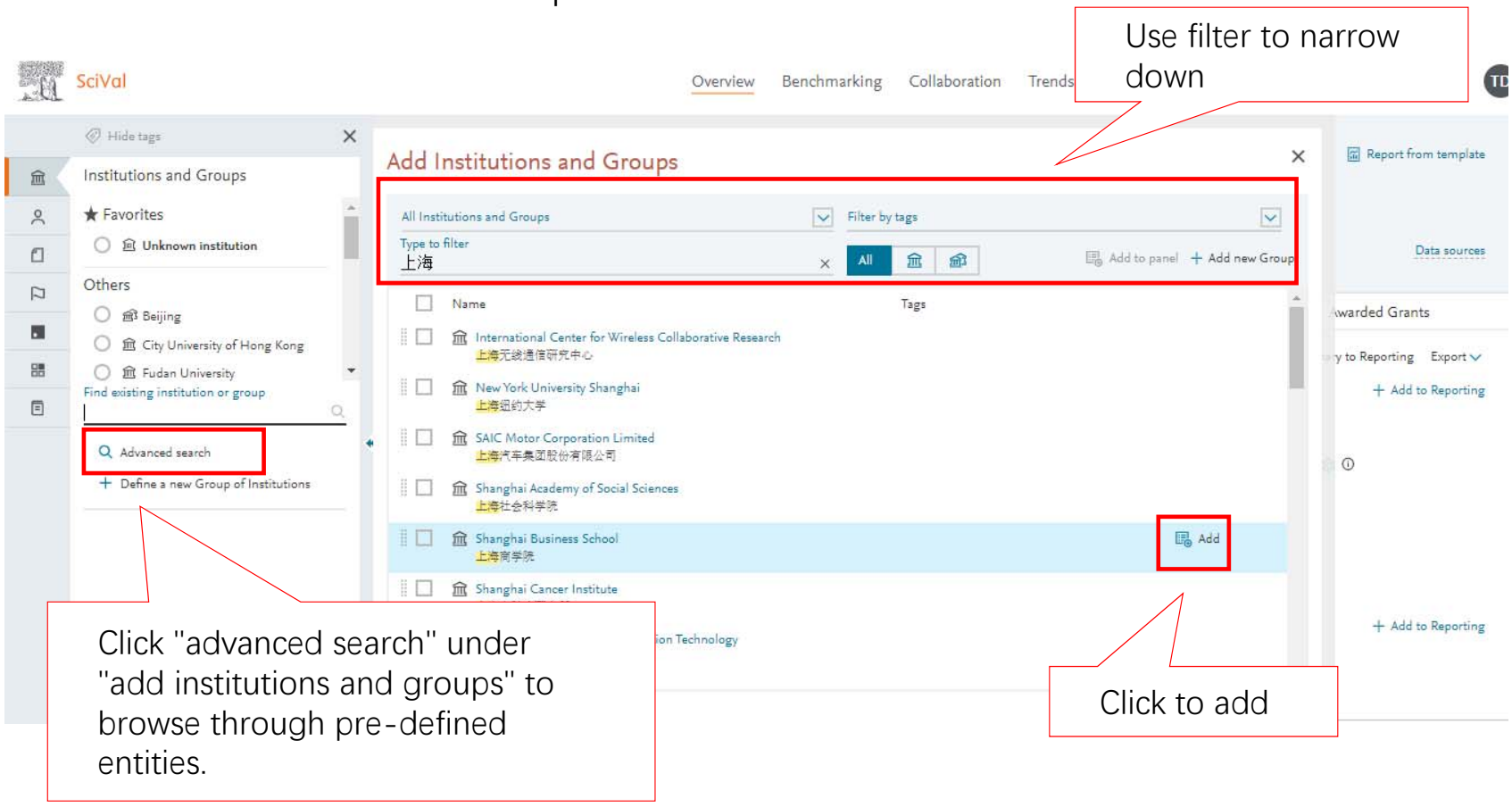
✓ Create Institutions and Groups – search to add



Input the name and search for the institution or group(Currently, SciVal supports to use Chinese name to query individual Chinese institution)

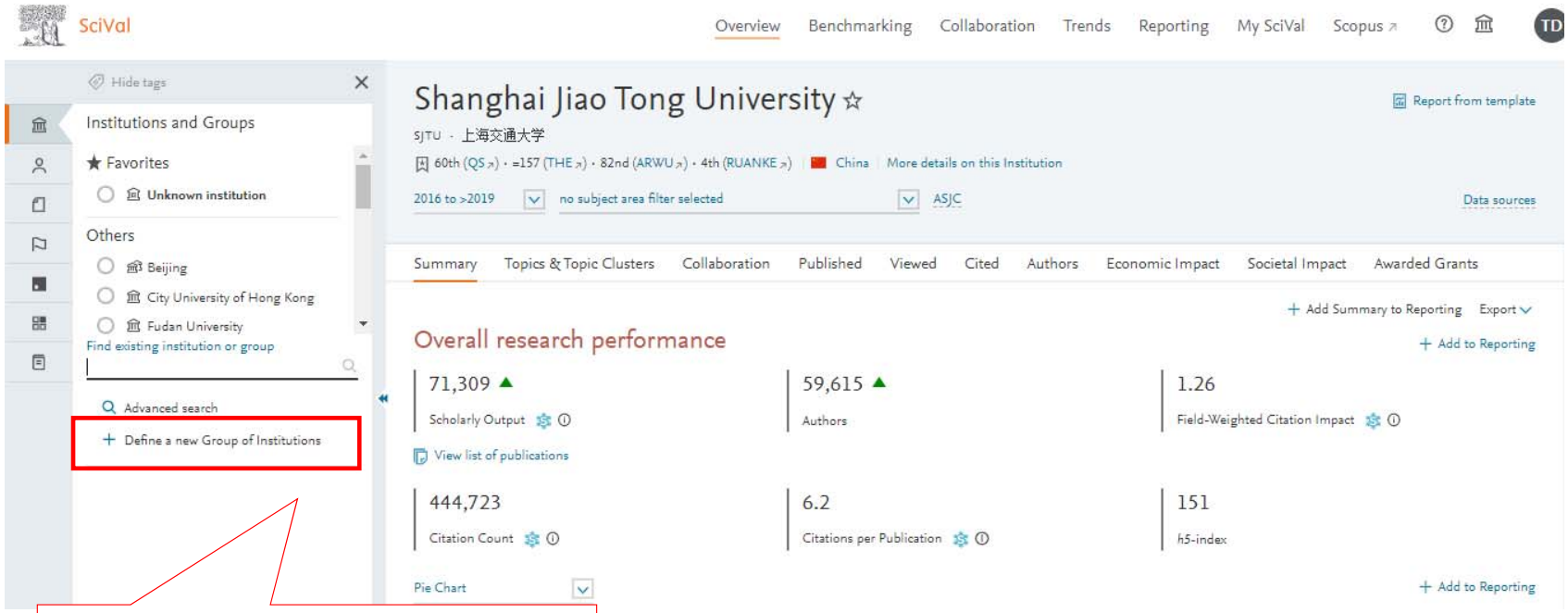
How to create entities in SciVal - Institutions and Groups

✓ Create Institutions and Groups – view to add



How to create entities in SciVal - Institutions and Groups

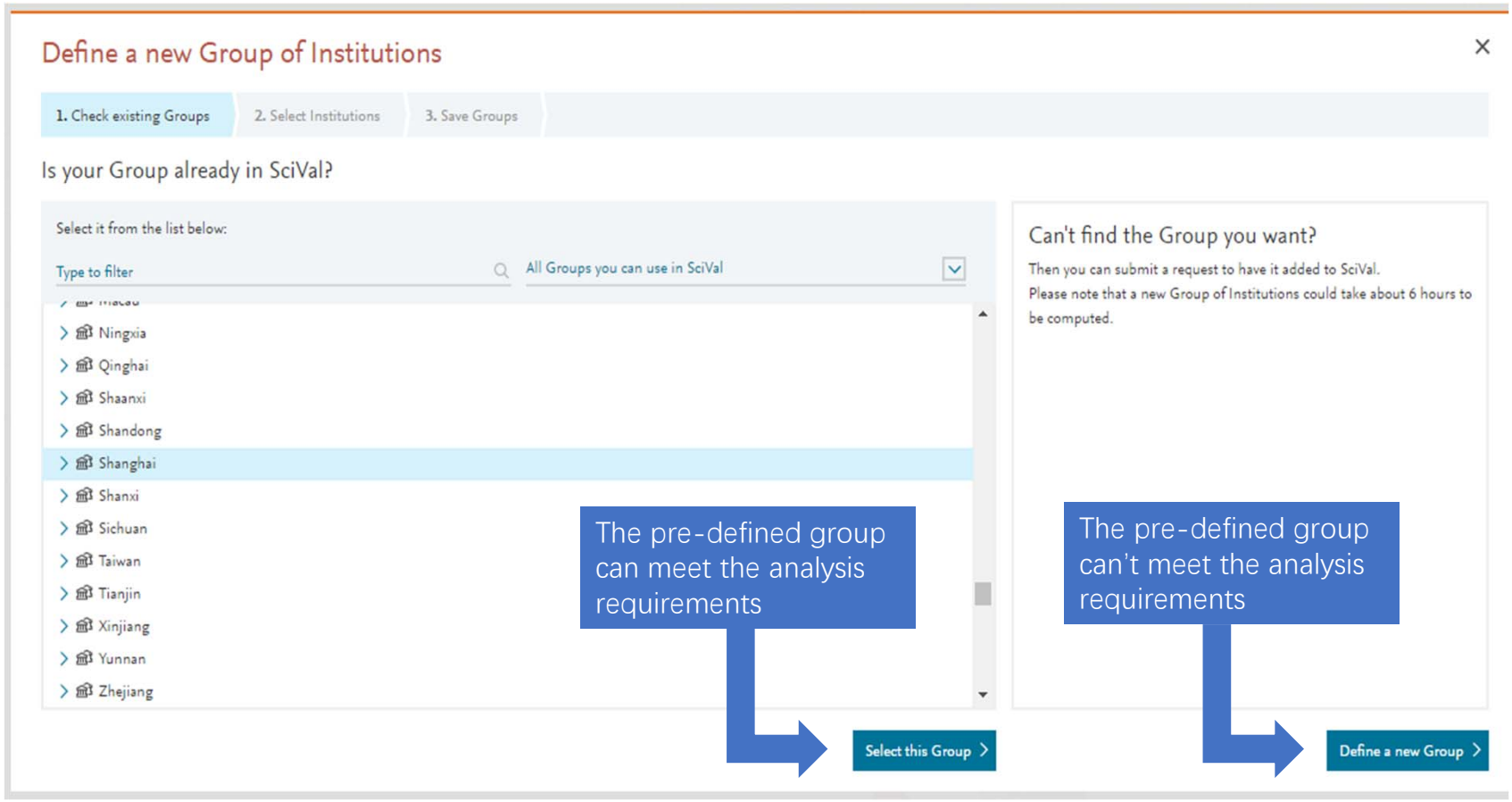
✓ Self-define groups



Click "define a new group of institutions" under "add institutions and group"

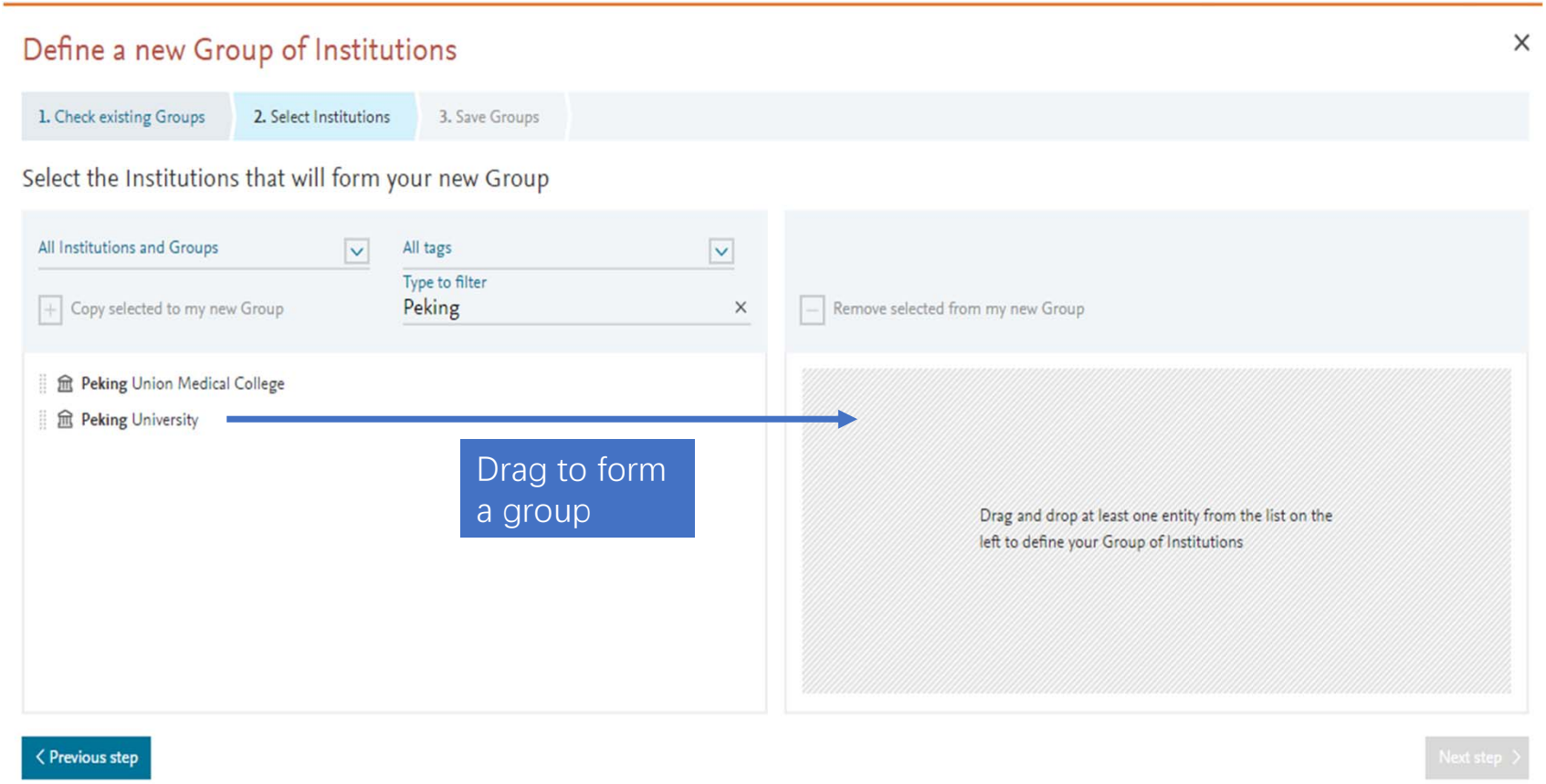
How to create entities in SciVal - Institutions and Groups

✓ Self-define groups



How to create entities in SciVal - Institutions and Groups

✓ Self-define groups



How to create entities in SciVal - Institutions and Groups

✓ Self-define groups