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Implementation of the Evaluation of Researchers' Bibliographies in Slovenia

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IZUM



Institute of Information Science (IZUM)

The non-profit public institution with the role of:

- the information service for research, education and culture
- the national bibliographic service (National COBISS Centre)
- the UNESCO regional centre for the development of integrated library systems and current research information systems
- developing and maintaining COBISS and SICRIS information systems

IZUM Homepage

- www.izum.si



IZUM

The Institute of Information Science (IZUM) is a public institution established by the Government of the Republic of Slovenia as an information infrastructural service for Slovenian science, culture and education.



COBISS

Co-operative Online Bibliographic System & Services

Virtual library of Slovenia
(COBISS+): One-stop access to information from over 500 Slovenian libraries.
Search for material; view material on loan and renew loan period;



SICRIS

Slovenian Current Research Information System

In SICRIS research organisations and research groups with registered employees, employed researchers, research projects and research programmes are presented.

- COBISS – Cooperative Online Bibliographic Information System & Services (www.cobiss.si)
- Organisational model of joining libraries into a library information system in Slovenia and in some other countries linked in the COBISS.net network
- COBISS.net:
 - Albania, Bosnia & Herzegovina, Bulgaria, Montenegro, Macedonia, Serbia, Slovenia
 - 8 COBIB shared bibliographic databases with 11 million bibliographic records
 - more than 1200 local databases (libraries) with 26 million local bibliographic records
- COBISS.SI (Slovenia): COBIB.SI shared bibliographic database with 5 million bibliographic records, 860 local databases (libraries)
- In 2018: 30th anniversary of the COBISS system

- National Current Research Information System
- SICRIS (Slovenia)
- E-CRIS (Albania, Bosnia & Herzegovina, Montenegro, Macedonia, Serbia)
- SICRIS is developed and maintained by IZUM and Slovenian Research Agency (ARRS)
- Research entities: research organisations and research groups with registered employees, researchers, research projects and research programmes

SICRIS Homepage

- SICRIS homepage (sicris.izum.si) with current numbers of research entities:

The screenshot displays the SICRIS homepage with a navigation bar at the top containing links for SEARCH, SERVICES, LOGIN, NOTIFICATIONS, and SICRIS. Below the navigation bar is a red banner with the text 'SICRIS / Public Access'. The main content area features a search bar on the left and a large graphic on the right. The search bar contains the text 'Enter search term' and a magnifying glass icon. The large graphic on the right is a stylized representation of a research network with orange lines and green nodes. Overlaid on this graphic is the text 'SICRIS - Slovenian Current Research Information System'. To the right of the graphic, there is a table of statistics.

	FIND
RESEARCHERS	15198
ORGANISATIONS	967
RESEARCH GROUPS	1562
ACTIVE PROJECTS	422
ACTIVE PROGRAMMES	331

Researchers' Bibliographies

- Bibliographies is one of the COBISS web applications
- Researchers' Bibliographies connects COBISS and SICRIS systems
- COBISS.net: personal and representative bibliographies
- COBISS.SI also includes:
 - evaluation of bibliographic indicators of scientific performance according to the ARRS methodology and rules
 - evaluation for the purposes of awarding habilitation titles in the three largest universities in Slovenia
 - data from Web of Science and Scopus (JCR, SNIP, citations)
- COBIB.SI bibliographic database: one third of all bibliographic records (1,7 million) belongs to researchers' bibliographies with
 - researcher's code
 - type of work: Typology of Document/works for Bibliography Management in COBISS

Example of an Article Display in Researchers' Bibliographies

- Bibliographic data from COBIB.SI: authors, title, journal title, ISSN, year, pages, doi ...
- Link to JCR and SNIP (built into COBISS)
- Citation data from WoS and Scopus: link to WoS/Scopus, number of citations (TC), number of citations without self-citations (CI) (so-called pure citations)
- Altmetrics data (Altmetric and PlumX)

5. SCHMIDT, Nathan W., JIN, Fan, LANDE, Roberto, CURK, Tine, XIAN, Wujing, LEE, Calvin, FRASCA, Loredana, FRENKEL, Daan, DOBNIKAR, Jure, GILLIET, Michel, WONG, Gerard C. L. Liquid-crystalline ordering of antimicrobial peptide-DNA complexes controls TLR9 activation. *Nature Materials*, ISSN 1476-4660. [Online ed.], 2015, vol. 14, str. 696-700, ilustr. <http://www.nature.com/nmat/journal/v14/n7/full/nmat4298.html>, doi: [10.1038/nmat4298](https://doi.org/10.1038/nmat4298). [COBISS.SI-ID [525410585](#)], [JCR, SNIP, WoS up to 2. 4. 2018: no. of citations (TC): 23, without self-citations (CI): 21, Scopus up to 28. 5. 2018: no. of citations (TC): 25, pure citations (CI): 23]



Evaluation of a Scientific Article According to the ARRS Methodology

The evaluation of a scientific article relies on:

- the article category with number of calculated points depending on the number of authors
- the points of above average scientific performance
- the number of pure citations

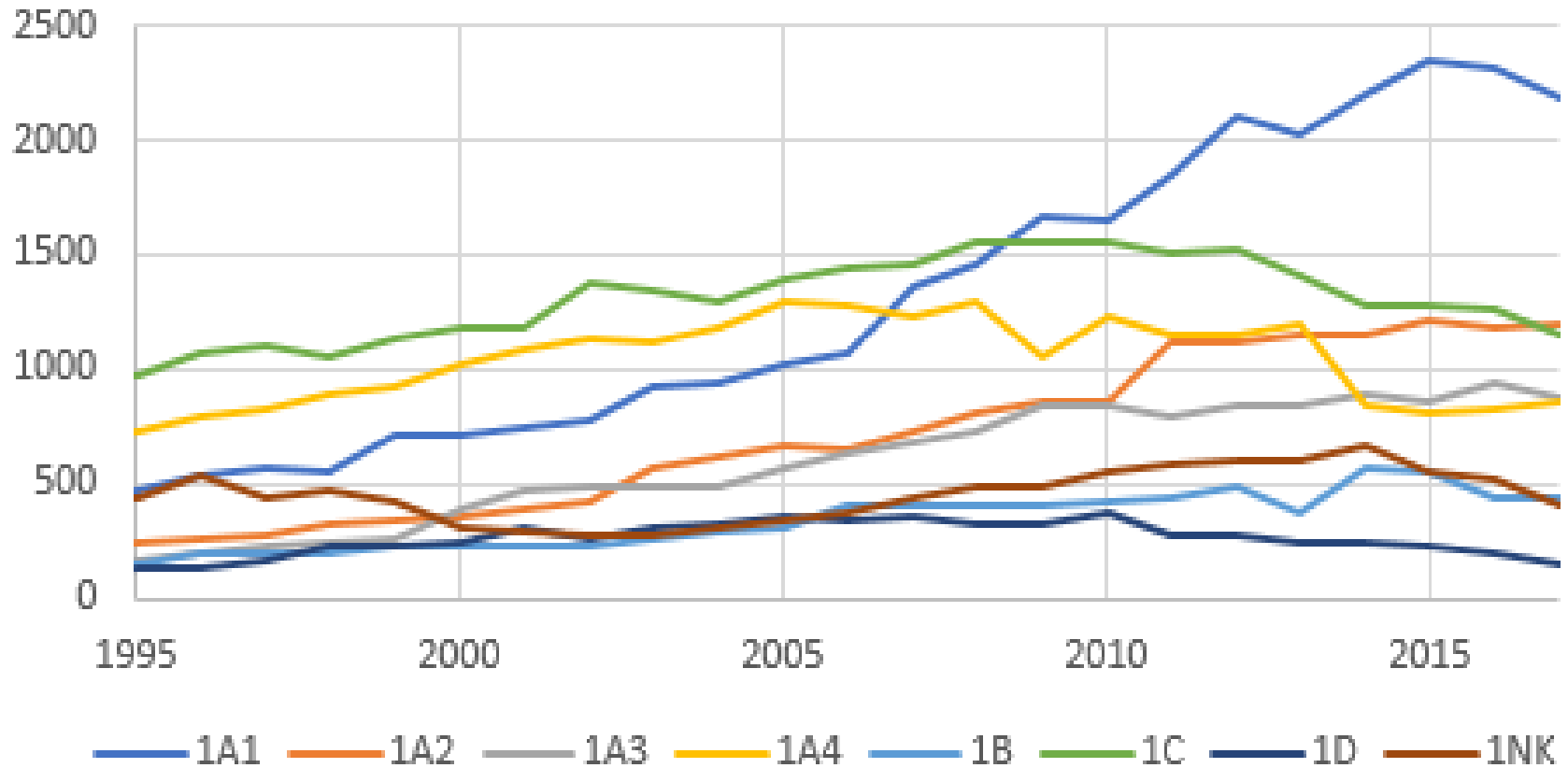
Article Categories

- 1A1 – 1A4: SCIE (JCR)
SSCI (JCR)
Scopus(d) – social sciences (SNIP)
Scopus(h) – humanities (SNIP)
- 1B: A&HCI, Scopus (except social sciences and humanities)
- 1C: MBP (international databases, e. g. MEDLINE, COMPENDEX ...)
- 1D: important national journals from ARRS list
- 1NK: articles in other journals (not included in scientific performance)

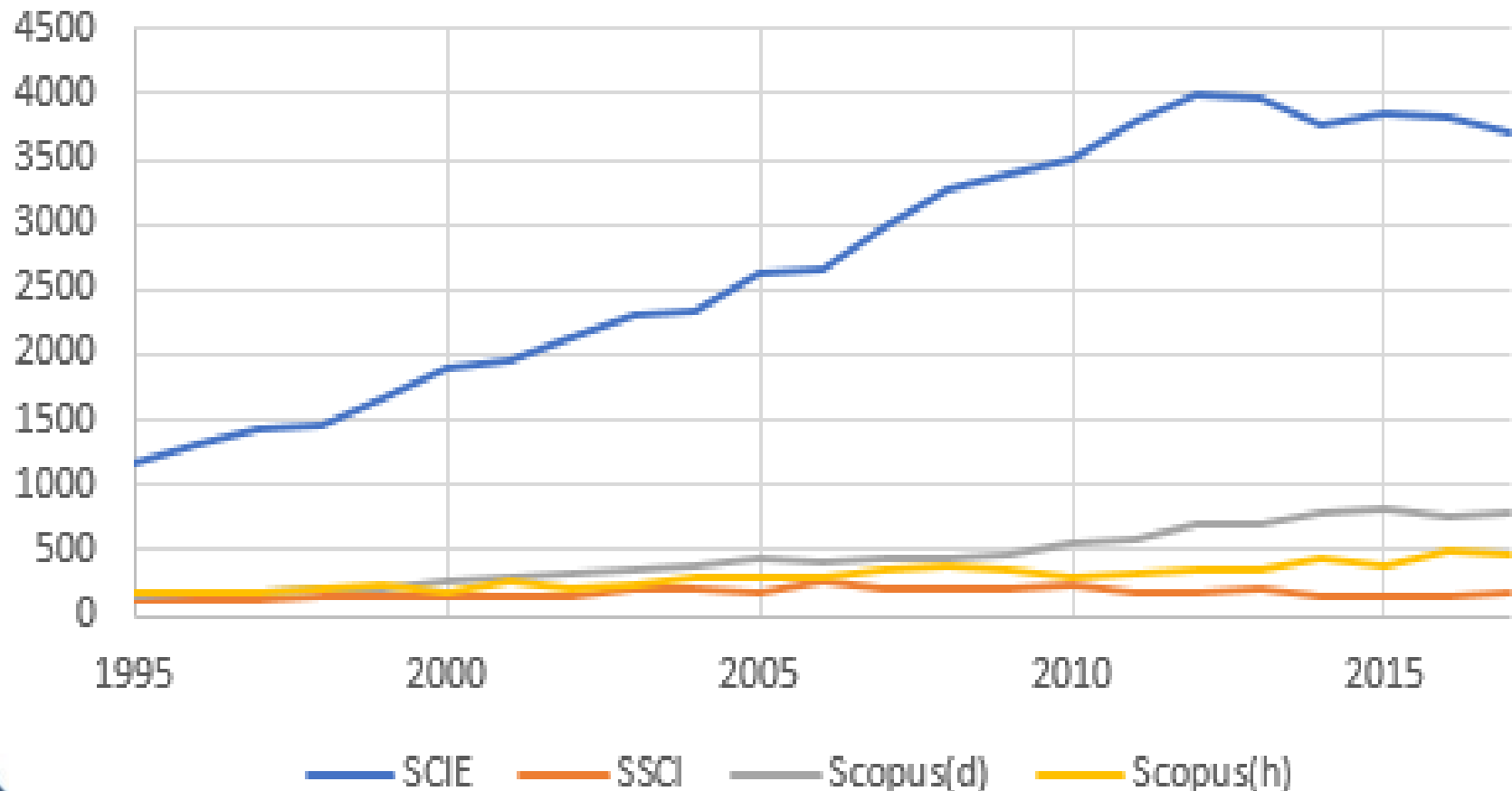
Article Points

- **1A1** (1. quarter): $100 + 70 * \frac{(IF - IF_{min})}{(IF_{max} - IF_{min})}$
or if the $IF_{max} - IF_{min} > 3 * IF_x$ as:
 - **1A1** (1. quarter): $100 + 80 * \ln\left(\frac{IF}{IF_{min}}\right)$
 - $\left. \begin{array}{l} \mathbf{1A2} \text{ (2. quarter): } 80 \\ \mathbf{1A3} \text{ (3. quarter): } 60 \\ \mathbf{1A4} \text{ (4. quarter): } 40 \end{array} \right\} + 20 * \frac{(IF - IF_{min})}{(IF_{max} - IF_{min})}$
- **1B**: 40
- **1C**: 30
- **1D**: 20

Number of Slovenian Articles by Categories and Years



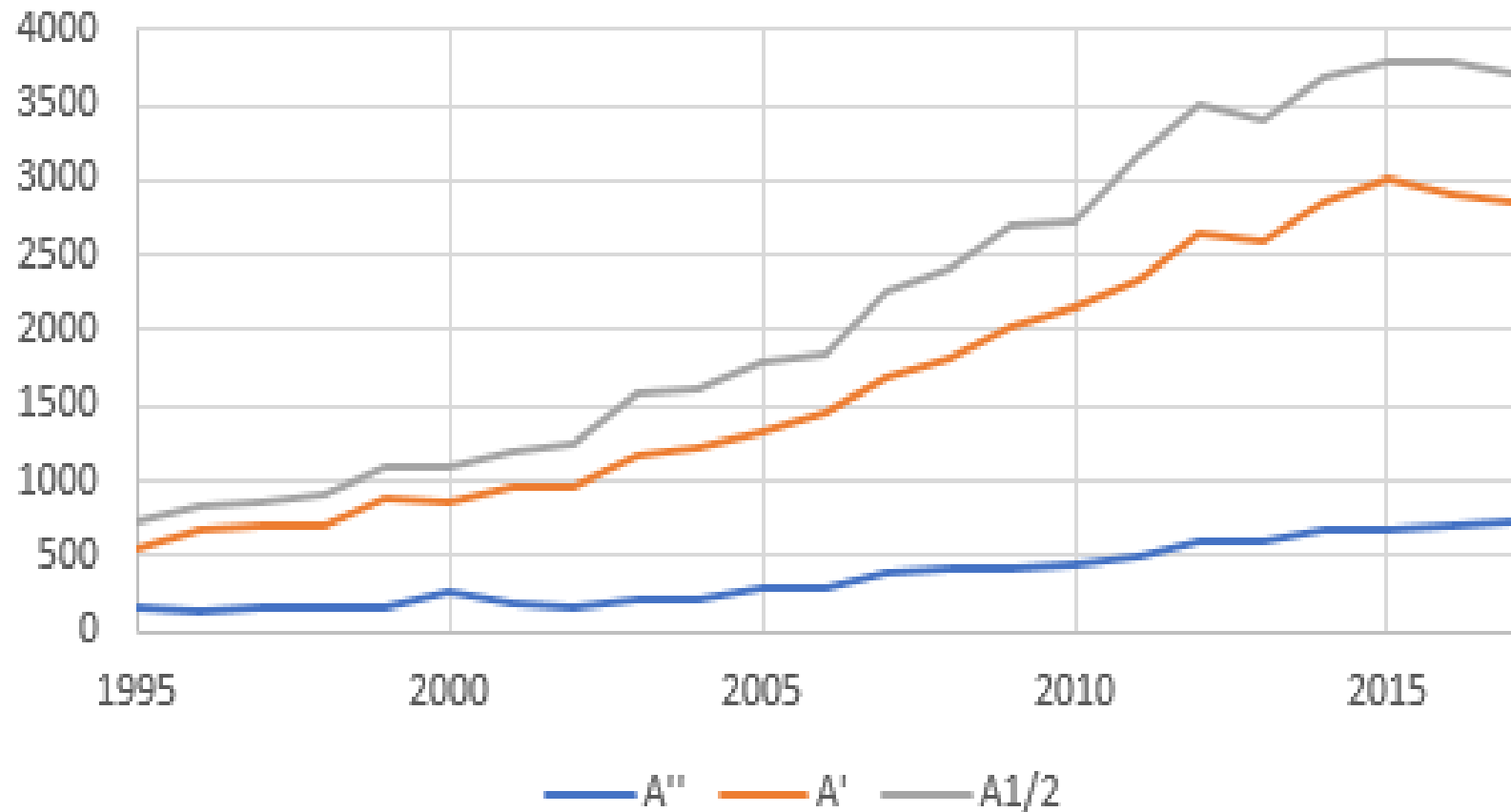
Number of Slovenian Articles by SCIE, SSCI, Scopus(d) and Scopus(h) and Years



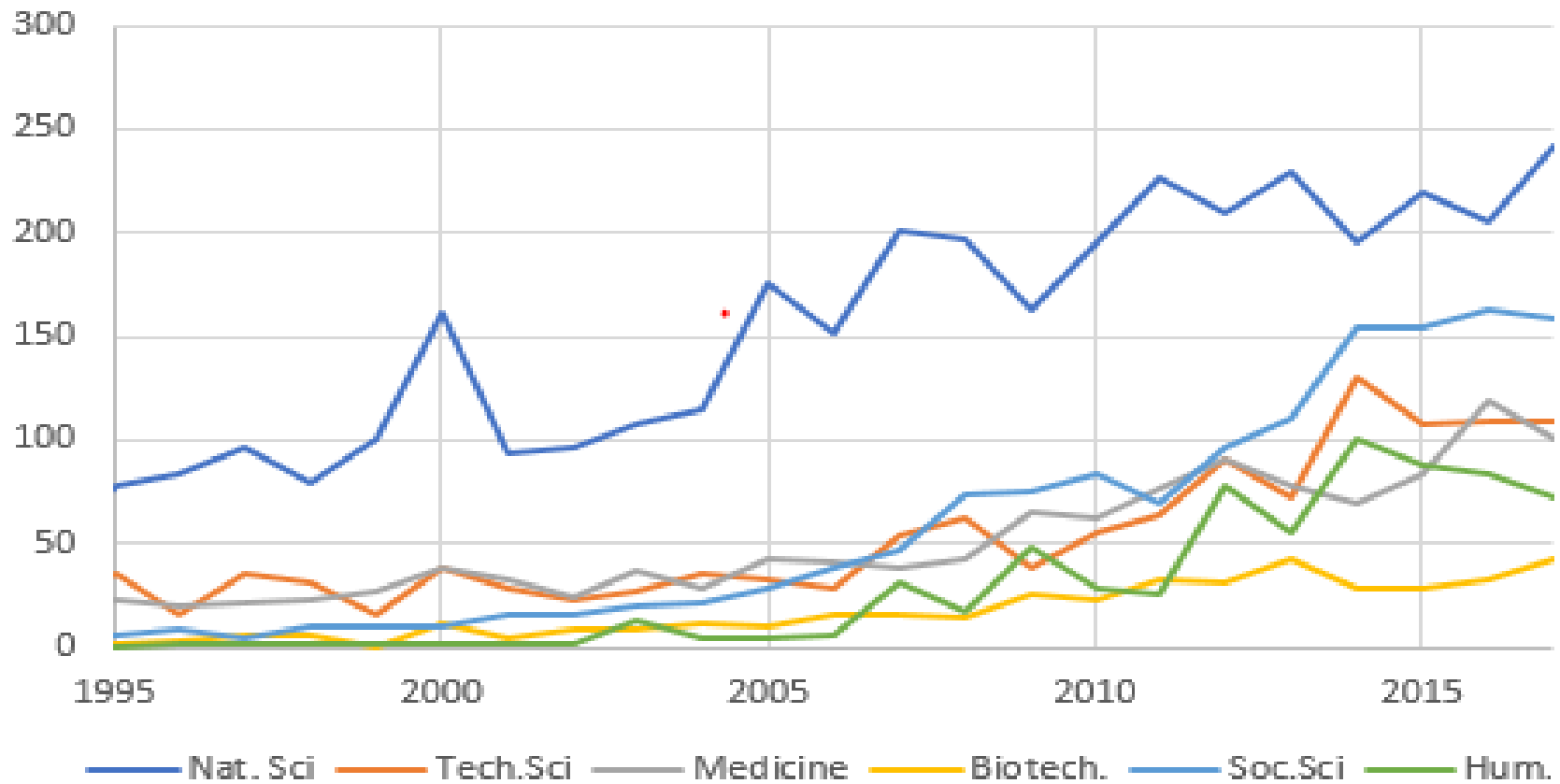
Above Average Scientific Performance

- **A''** quantitative score: exceptional achievements
journal is on the 1st or 2nd place in the categories of SCIE (ranked by impact factor) or has an impact factor greater than 8 or belongs to top 5% of SCIE category or top 10% of SSCI category or 1A1 in Scopus(d)/Scopus(h) categories
- **A'** quantitative score: high quality achievements
A'' plus journal belongs to 1A1 category of SCIE, to 1A1 or 1A2 of SSCI, to 1A1, 1A2 or 1A3 of Scopus(d)/Scopus(h) categories or to A&HCI
- **A^{1/2}** quantitative score: important achievements
(A' plus 1A2 categories of SCIE).

Number of Slovenian Articles in A'', A' and A^{1/2} by Years



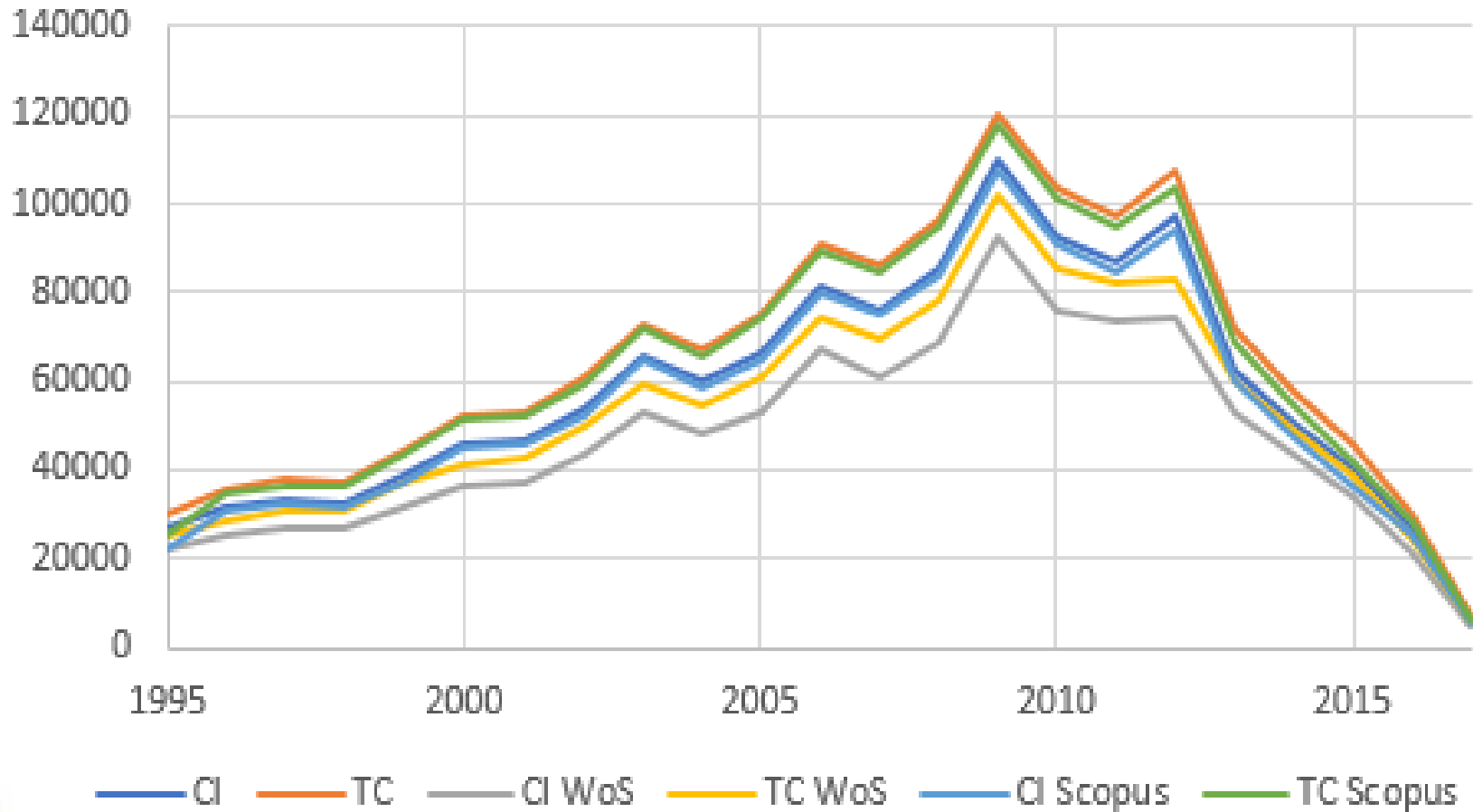
Number of Articles in A'' Through Various Sciences (UDC) by Years



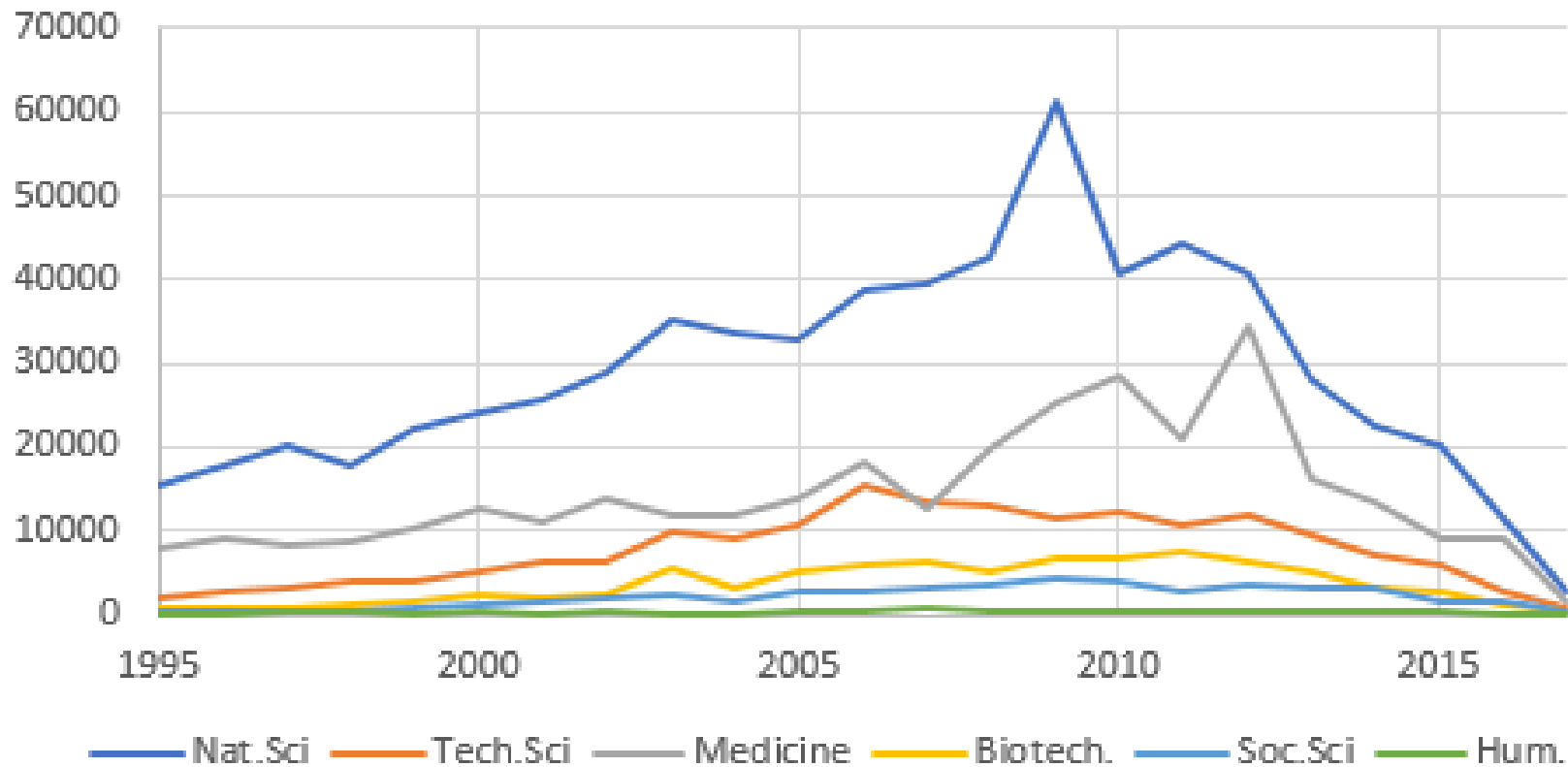
Citations WoS/Scopus

- Connecting COBISS and WoS/Scopus citation data
- Links COBISS.SI – WoS/Scopus are established daily
- Number of citations (TC) is refreshed weekly
- Number of pure citations (CI) – without self-citations (for now detected in COBISS.SI database – planning to change)
- By ARRS's evaluation number of pure citations in the last 10 years (the highest value of WoS/Scopus)
- SciMet – our portal for managing Slovenian citation production (scimet.izum.si)

Number of Citations (TC) and Pure Citations (CI) from WoS and Scopus by Year of Publication



Number of Pure Citations (CI) Through Various Sciences by Year of Publication



Evaluating Bibliographic Indicators According to ARRS Methodology – Summary Data

- A_1 quantitative score (in the last 5 years):

$$A_1 = \frac{\text{Points} * 4}{1500} + \frac{A''}{1500} + \frac{A'}{1500} + \frac{A^{1/2}}{1500}$$

↓

↓

↓

↓

↓

7

4

1

1

1

limit values

$$\text{Points} = \sum Z + \min\left(\frac{15}{85} \sum Z, \sum S\right)$$

Z – scientific points
S – professional points

- CI_{10} - pure citations (in the last 10 years)

Example of Bibliographic Indicators for a Researcher in Bibliography Section of SICRIS

Bibliography

source: COBISS.SI

Representative / [Personal](#) / [COBISS+](#)

Evaluation

source: COBISS.SI & ARRS

[Evaluation of bibliographic indicators of scientific performance according to the ARRS \(rules\)](#) - in Slovene

Points	A''	A'	A1/2	CI10	CImax	h10	A1	A3
530,06	276,76	487,47	500,81	181	36	7	2,24	0

Data for the last 5 years (citations for the last 10 years) on 08.06.2018;

Data for ARRS tenders (22.05.2018 - Mentorji MR, [archive](#)) - in Slovene

Citations

source: COBISS.SI

[Citations for bibliographic records in COBIB.SI that are linked to records in citation databases](#) - in Slovene

Base	Linked records	Citations	Pure citations	Average pure citations
WoS	16	184	169	10,56
Scopus	16	196	180	11,25

Example of Bibliographic Indicators for a Researcher in Bibliographies (Matrix Model)

- Number of works:

Število bibliografskih enot														Citati WoS			Citati Scopus						
(1)	1A1	1A2	1A3	1A4	1B	1C		1D					Z	NK	A"	A'	A ^{1/2}	TC	CI	CIAu	TC	CI	CIAu
1.01	11	0	0	0	0	0		0					11	0	6	11	11	148	138	28.05	158	147	29.98
1.02	1	0	0	0	0	0		0					1	0	0	1	1	3	2	0.20	3	2	0.20
1.03	0	0	0	0	0	0		0					0	0	0	0	0	0	0	0	0	0	0

...

- Number of points:

Število točk																				
(1)	1A1	1A2	1A3	1A4	1B	1C				1D						Z	NK	A''	A'	A ^{1/2}
1.01	473.14	0	0	0	0	0				0						473.14	0	276.76	473.14	473.14
1.02	14.33	0	0	0	0	0				0						14.33	0	0	14.33	14.33
1.03	0	0	0	0	0	0				0						0	0	0	0	0

...

- A display example of a article evaluation:

5. SCHMIDT, Nathan W., JIN, Fan, LANDE, Roberto, CURK, Tine, XIAN, Wujing, LEE, Calvin, FRASCA, Loredana, FRENKEL, Daan, DOBNIKAR, Jure, GILLIET, Michel, WONG, Gerard C. L. Liquid-crystalline ordering of antimicrobial peptide-DNA complexes controls TLR9 activation. *Nature Materials*, ISSN 1476-4660. [Online ed.], 2015, vol. 14, str. 696-700, ilustr. <http://www.nature.com/nmat/journal/v14/n7/full/nmat4298.html>, doi: [10.1038/nmat4298](https://doi.org/10.1038/nmat4298). [COBISS.SI-ID [525410585](#)], [JCR, SNIP, WoS do 2. 4. 2018: št. citatov (TC): 23, čistih citatov (CI): 21, čistih citatov na avtorja (CIAu): 2.02, Scopus do 28. 5. 2018: št. citatov (TC): 25, čistih citatov (CI): 23, čistih citatov na avtorja (CIAu): 2.21]

kategorija: 1A1 (Z, A", A', A^{1/2}); uvrstitev: SCI, Scopus, MBP; tip dela je verificiral OSICN

točke: 28.81, št. avtorjev: 11

ARRS Public Tenders

- Approx. 5 main tenders and 15 international tenders yearly
- For each tender minimum threshold values are specified (followed by two foreign reviewers)
- For example, for leaders of research projects and programmes the minimum values are:
 - natural sciences: $A_1 : 0,5$ and $Cl_{10} : 200$
 - social sciences: $A_1 : 1$ and $Cl_{10} : 5$

Thank you for your attention!