

Performance Presentation

Uniwersytet Mikołaja Kopernika

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Agenda



- Overview on UMK research strength
- Comparison with 4 peer institutions
- Analysis by Research Area
- Conclusions



Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012



UMK Research Strength

Publications and Co-Authorships

Competencies

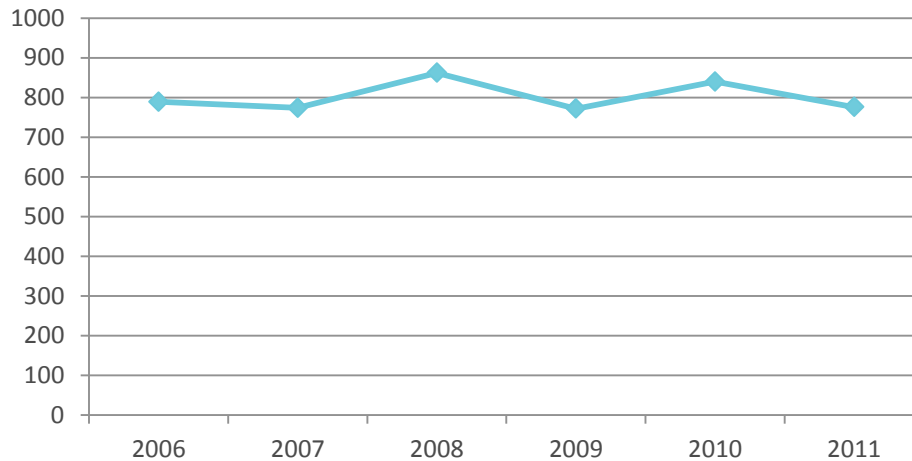
Interdisciplinarity

Collaborations

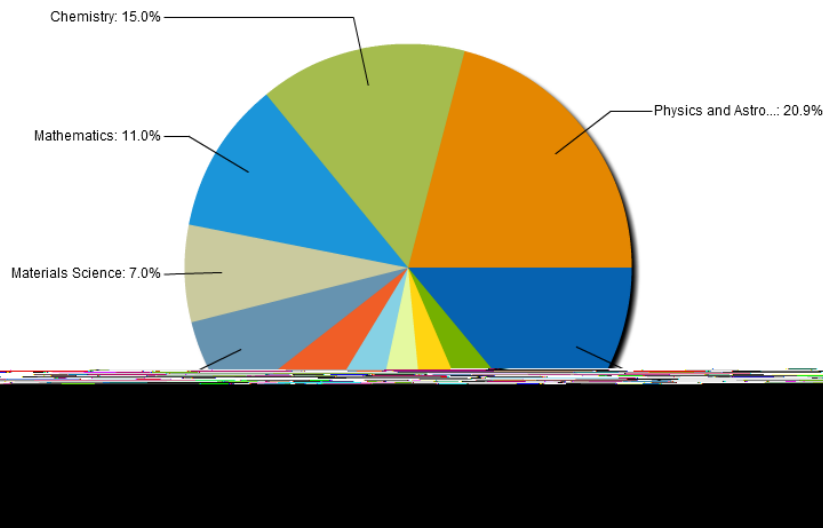
Publication output 2006-2010



No of publications per year



Publication output stable over 6 years



Physics, Astronomy and Chemistry are among most popular science areas



Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012



International Co-authorship vs. International Cooperation



International Cooperation - Bilateral Agreements (excerpt from <http://www.umk.pl>)

FRANCE

1. Université d'Angers

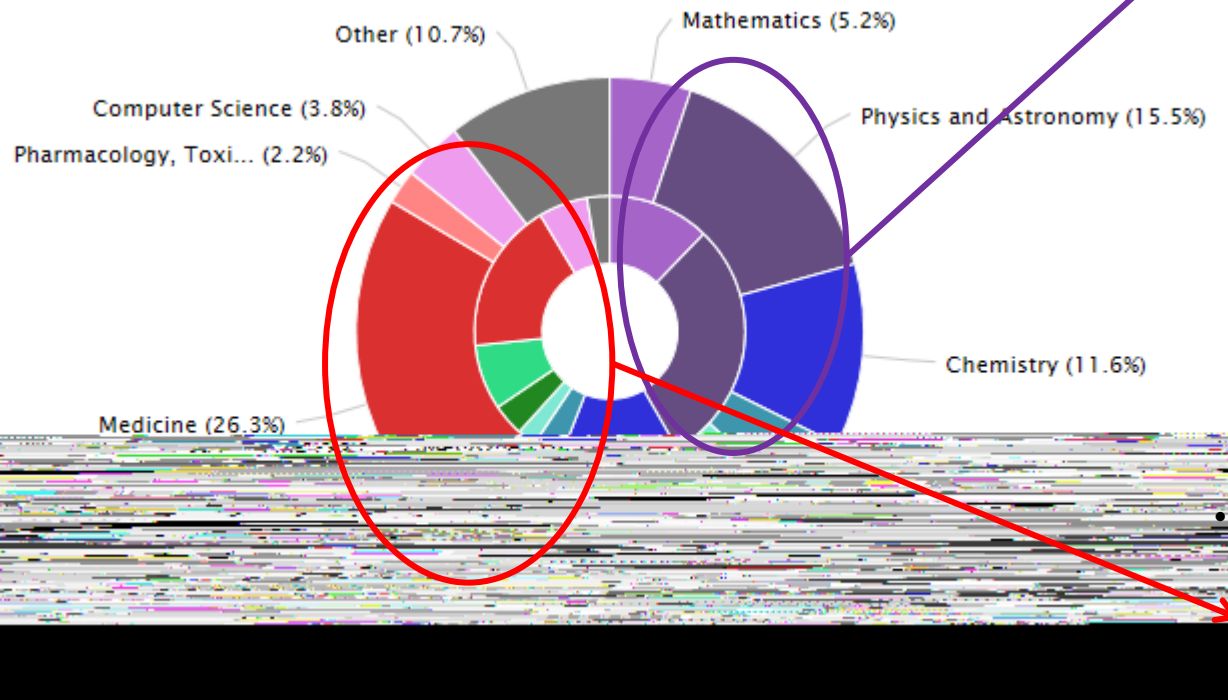
GERMANY

1. Bundeswehr Universität München
2. Carl von Ossietzky Universität Oldenburg
3. Ernst Moritz Arndt Universität Greifswald
4. Georg-August-Universität Göttingen
5. Otto-Friedrich-Universität Bamberg
6. Studentenwerk Göttingen
7. Technische Universität Ilmenau
8. Universität Rostock

Does this match – are we doing the right things?

Institution	Country	Co-authored articles
Ruhr-Universität Bochum	Germany	64
Université Joseph Fourier	France	63
Université de Toulouse PRES	France	61
Université Paris 6	France	60
University of Erlangen-Nuremberg	Germany	58
Université Paris 7	France	56
University of Tübingen	Germany	55
University of Hamburg	Germany	53
Ecole Polytechnique	France	53
Max Planck Institutes - Baden Württemberg	Germany	52

Article Output per Subject Area (2011)



- 15.5% of published articles are within Physics&Astronomy, however it contribute to 29,5% of the competency articles

- Medicine (Health Sciences, Med. Specialities, Brain Research, Health sciences) contribute 26,3% to publications vs. 14,1% to competencies

Outer ring: All published articles, by subject area
Inner ring: Articles in competencies, by subject area

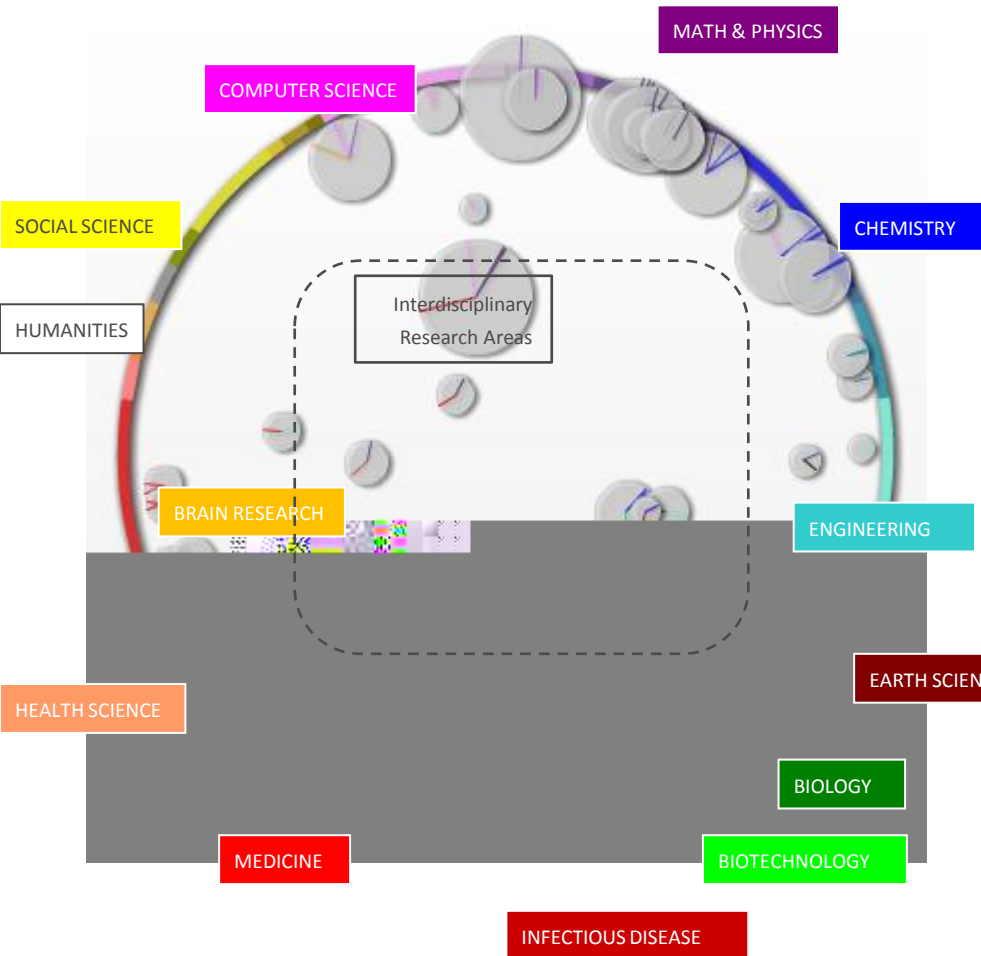
Note: Scopus subject classification used



Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012



Research Strength and Focus Areas of UMK



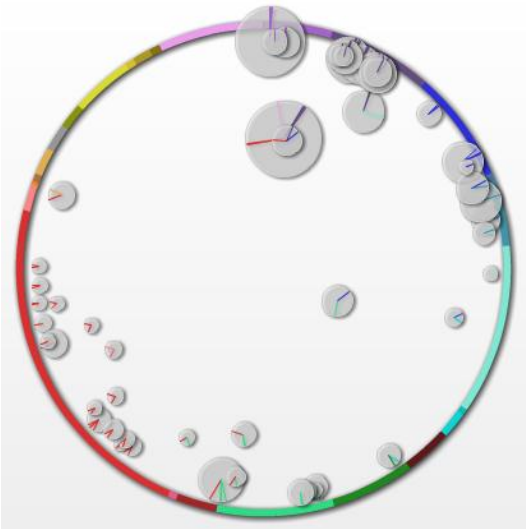
- UMK is already leading these specific competencies or is on the edge of becoming leader
- Coloured bars and positioning on the ring indicate subject area where it is connected to
- Most of interdisciplinary bubbles do have blue bar
 - Chemistry has the highest degree of interdisciplinarity and connects several fields such as Medicine, Engineering, Biotechnology
- Research Strength
 - Math&Physics, Chemistry, Medicine and Biology/Biotechnology

Competencies development over time



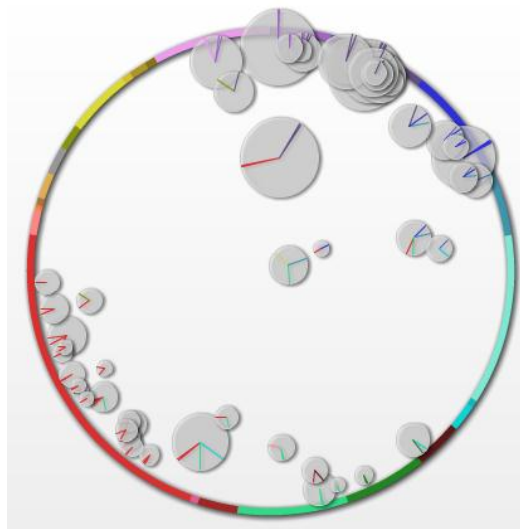
2009

53 competencies



2010

57 competencies



2011

56 competencies



CAGR

2,8%

- Stable number of competencies over the last 3 years
- Prevalance of „hard” and „medical” specialties
- „hard” sciences trend towards Computer and Decision Sciences
- „medical” specialties expand towards Biochemistry, Genetics and Molecular Biology and tend to collaborate with Chemistry and computer sciences
- Visible growth of interdisciplinary research areas

Competencies development over time – Shanghai list examples

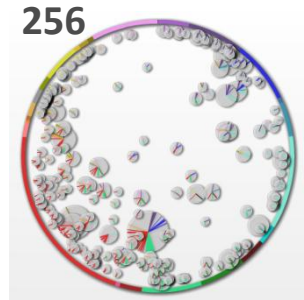
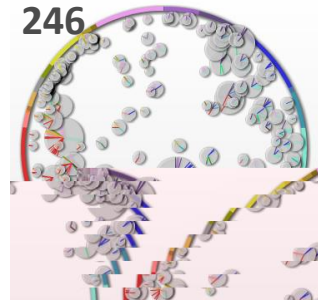
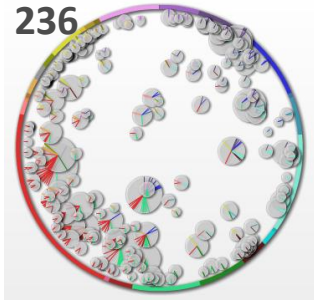


2009

2010

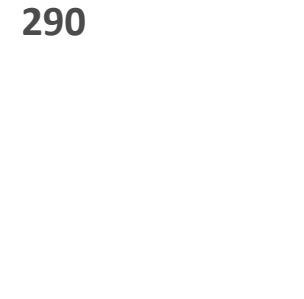
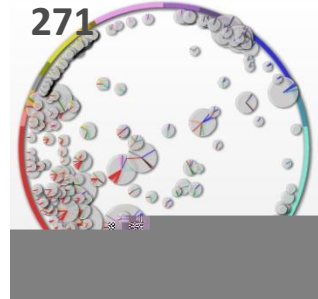
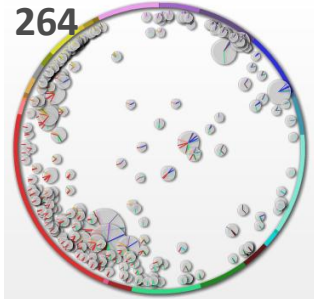
2011

Cambridge
No. 5



CAGR
4,2%

Oxford
No. 10



CAGR
4,8%

Charles University
Top 200-300

174

184

203

CAGR
8,0%



Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012



Table View of Competencies



institution Nicolaus Copernicus University | year 2011 | [Change](#)

Competencies of Nicolaus Copernicus University: 56

Finance (0)

- Decision Sciences (0)
- Computer Science (5)
- Multidisciplinary (0)

Leadership of this institution

- Publication leader (17)
- Reference leader (4)
- Innovation leader (9)

Article share of this institution

- Growing share (33)
- Declining share (23)

Size of field (worldwide)

- Relatively large field (20)
- Relatively small field (36)

Trend of field (worldwide)

- Growing field (40)
- Declining field (16)

- UMK is the publication leader in 17 comp's out of 56
- UMK is quite recent in their Research Strength
 - 9 with Innovation Leadership (see next slide)
- Publication Impact in terms of citations is rather low (4 with Reference leadership)
- UMK's competencies are mostly growing their share
- UMK's competencies are mostly in relatively small fields
- UMK's competencies are mostly in growing fields



Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012



Methodology: how we defined “strengths”

Definition ①: “Publication” Leadership

- The institution/country with the greatest Relative Article Share (RAS) is the publication leader in a competency. A publication leader can be seen as moving a research area forward.

Definition ②: “Reference” Leadership

- A reference leader is the institution/country with the greatest share of highly cited articles (greatest Relative Reference Share (RRS)) in a competency, compared to other institutions/countries. RRS is a relative measure of how influential an institution/country or author is within a particular competency.

Definition ③: “Innovation” Leadership

- An institution/country is considered an Innovation leader if it is building on more recent discoveries in a field. An institution/country is considered an Innovation leader for a competency if it has a higher SotA value than the publication leader, and its RAS is > 0.8 .

Defined as “Competency” when the field is large enough in terms of number of publications and when institution has at least one of the leadership types

Matrix View



institution Nicolaus Copernicus University | year 2011 | [Change](#)

Competencies of Nicolaus Copernicus University: 56

Subject areas

- Mathematics (4)
- Physics and Astronomy (15)
- Chemistry (10)
- Chemical Engineering (1)
- Materials Science (4)
- Engineering (4)
- Energy (0)
- Environmental Science (1)
- Earth and Planetary Sciences (2)
- Agricultural and Biological Sciences (5)
- Biochemistry, Genetics and Molecular Biology (7)
- Immunology and Microbiology (2)
- Veterinary (0)
- Medicine (22)
- Pharmacology, Toxicology and Pharmaceutics (0)
- Health Professions (0)
- Nursing (0)
- Dentistry (0)
- Neuroscience (1)
- Arts and Humanities (0)
- Psychology (0)
- Social Sciences (0)
- Business, Management and Accounting (0)
- Economics, Econometrics and Finance (0)
- Decision Sciences (0)

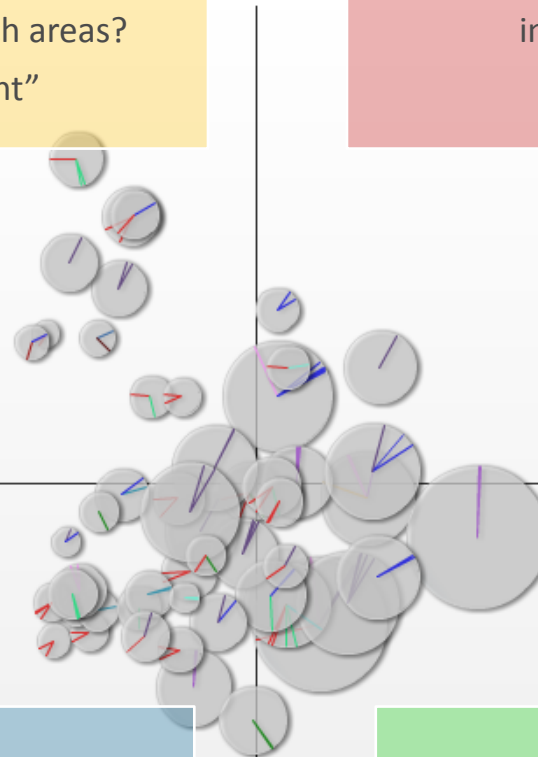


How can we increase our market share in these research areas?
→ Active "Recruitment"

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?



low Relative Article Share high

low Competency Growth high

[Export image](#)



Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012



Collaboration worldwide



Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012



Number of institutions within this country with co-authored articles



Collaborations in Europe



Institution	Co-authored articles	Co-authored articles in competencies
1. Polish Academy of Sciences	218	52
2. University of Warsaw	144	11
3. Jagiellonian University	140	14
4. University of Medical Sciences Poznan	117	10
5. Medical University of Gdansk	110	18
6. Medical University of Warsaw	77	4
7. Medical University of Lodz	76	5
8. Ruhr-Universität Bochum	64	3
9. Université Joseph Fourier	63	8
10. Université de Toulouse PRES	61	6
11. Université Paris 6	60	3
12. Wrocław Medical University	60	3
13. University of Erlangen-Nuremberg	58	1
14. Charles University	57	0
15. Medical University of Silesia	57	7
16. Université Paris 7	56	0
17. University of Tübingen	55	0
18. University of Hamburg	53	1
19. Ecole Polytechnique	53	0
20. University of Technology and Agriculture	53	4
20. University of Technology and Agriculture	52	0
21. Max Planck Institutes - Baden Württemberg	52	1
22. CEA Saclay	51	1
23. University of Leeds	50	0
24. Humboldt-Universität zu Berlin	50	0
25. University of Heidelberg	50	0
26. Université Montpellier II	50	0
27. University of Durham	49	0
28. North West University	49	0
29. Dublin Institute for Advanced Studies	49	0
30. Armenian Academy of Sciences - Yerevan F	48	0
31. University of Adelaide	48	0
32. Pomeranian Medical University	47	3
33. Medical University of Białystok	45	3
34. University of Warmia and Mazury	44	8
35. Adam Mickiewicz University	41	15
36. Medical University of Lublin	39	1
37. Children's Memorial Health Institute	36	5
38. CSIC	35	9

Example Spain



HISZPANIA

1. Universidad de Santiago de Compostela

<http://www.umk.pl/wspolpraca/umowy/>

institution Nicolaus Copernicus University | year 2011 | [Change](#)

 **Universidad de Santiago de Compostela** | Collaboration with Nicolaus Copernicus University



Where is collaboration taking place?

6 articles were **co-authored** by researchers at Nicolaus Copernicus University and Universidad de Santiago de Compostela

3 of those 6 co-authored articles (50%) appear in a competency of Nicolaus Copernicus University

Are there better potential partners?

institution Nicolaus Copernicus University | year 2011 | [Change](#)

 **CSIC** | Collaboration with Nicolaus Copernicus University



Where is collaboration taking place?

35 articles were **co-authored** by researchers at Nicolaus Copernicus University and CSIC

9 of those 35 co-authored articles (25.7%) appear in a competency of Nicolaus Copernicus University

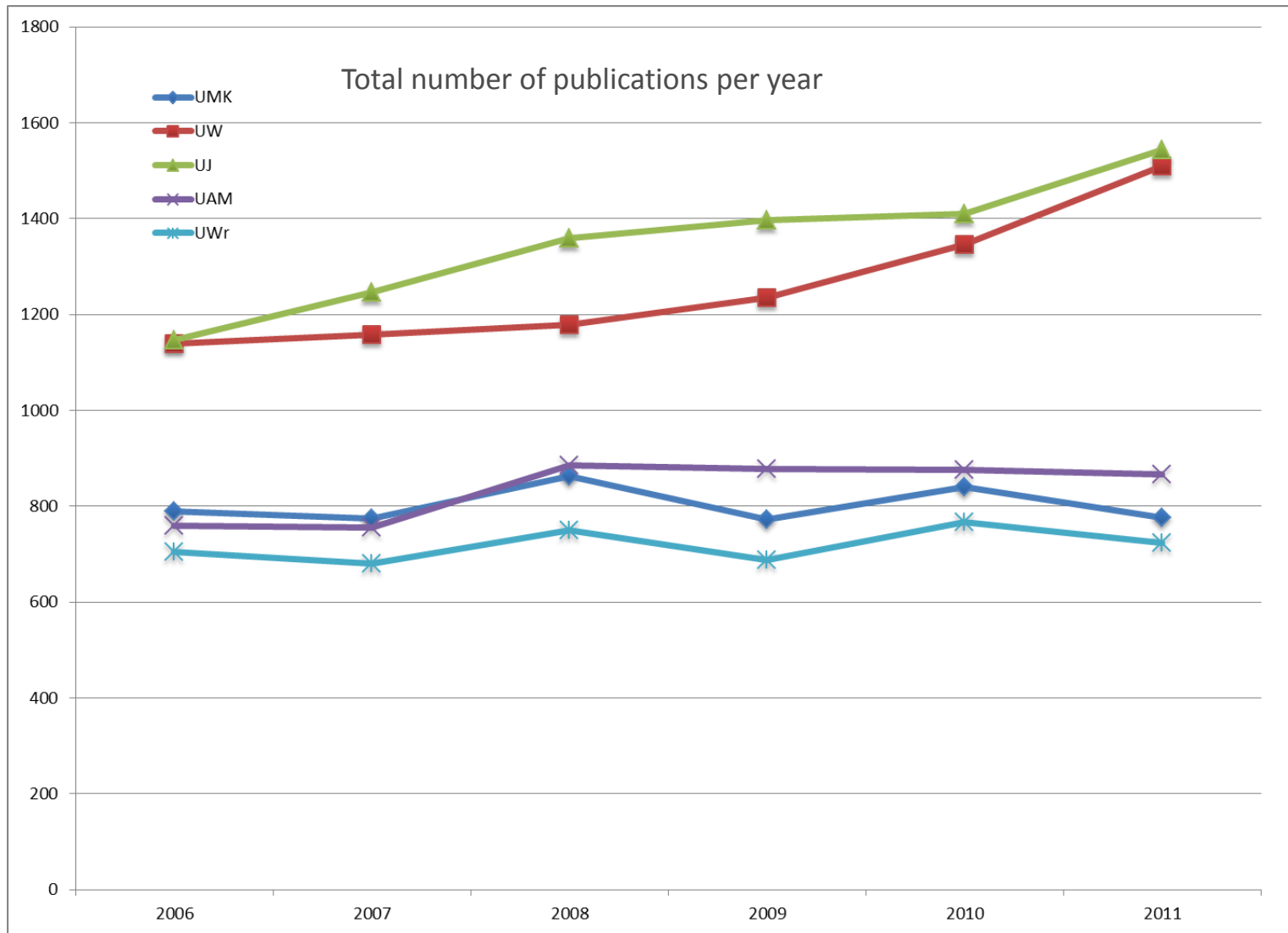


Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012



UMK and its peers

Quantity as a prerequisite of Quality



Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012



Polish publications: Top 12 contributing institutions



Institution	Articles ▼	Growth	Competency articles	Collaboration			Citation count	CPA	SotA	Top 5 rate
				Overall	National	International				
Polish Academy of Sciences	17,801	0.71% ▲	8.01%	73.42%	43.02%	45.13%	70,177	3.94	-0.52	28
Jagiellonian University	8,325	5.67% ▲	8.44%	59.51%	31.36%	40.79%	40,417	4.85	0.15	16
University of Warsaw	6,446	7.67% ▲	8.56%	69.54%	38.37%	49.32%	31,624	4.91	0.24	14
Warsaw University of Technology	5,177	1.49% ▲	6.87%	49.30%	27.79%	29.82%	16,609	3.21	1.23	8
Wroclaw University of Technology	4,864	5.56% ▲	5.43%	45.47%	21.32%	29.44%	10,775	2.22	0.77	3
Medical University of Lodz	4,395	3.46% ▲	2.15%	43.01%	32.50%	16.41%	15,693	3.57	1.52	2
AGH University of Science and ...	4,182	11.60% ▲	9.25%	48.25%	26.52%	30.17%	9,052	2.16	-0.00	9
Adam Mickiewicz University	3,894	2.20% ▲	13.41%	55.65%	30.28%	35.17%	14,716	3.78	1.50	10
Nicolaus Copernicus University	3,677	2.95% ▲	4.83%	50.33%	28.24%	30.85%	11,878	3.23	0.17	3
Medical University of Warsaw	3,561	2.37% ▲	0.45%	52.83%	41.87%	18.86%	15,502	4.35	1.42	1
University of Wroclaw	3,332	2.62% ▲	10.25%	63.00%	30.93%	39.71%	11,285	3.39	1.64	8
Medical University of Silesia	3,326	3.40% ▲	1.15%	39.35%	29.08%	17.10%	18,063	5.43	1.51	1
Wroclaw Medical University	3,240	-0.43% ▼	1.18%	43.34%	32.43%	17.16%	12,649	3.90	1.24	2
University of Medical Sciences...	3,057	9.42% ▲	1.56%	43.97%	31.89%	18.60%	9,162	3.00	1.14	1
University of Silesia	2,814	3.29% ▲	19.23%	56.59%	36.08%	30.08%	8,604	3.06	-1.36	14
Technical University of Lodz	2,725	1.89% ▲	3.41%	42.46%	23.50%	22.79%	6,639	2.44	0.10	3
Silesian University of Technol...	2,575	13.48% ▲	2.82%	32.99%	21.88%	14.93%	4,793	1.86	0.63	3
Medical University of Gdansk	2,368	-0.20% ▼	1.63%	54.68%	35.56%	29.37%	13,409	5.66	1.15	2

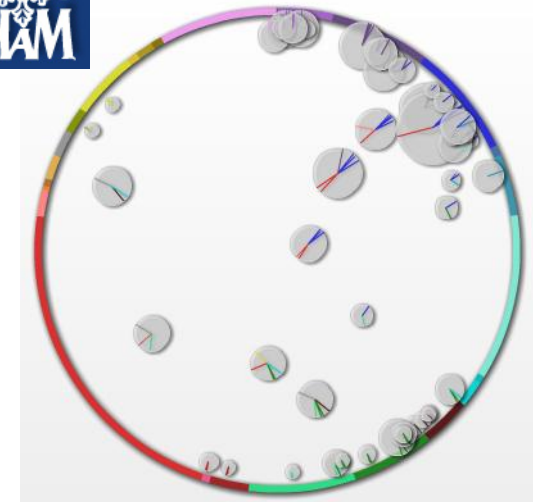
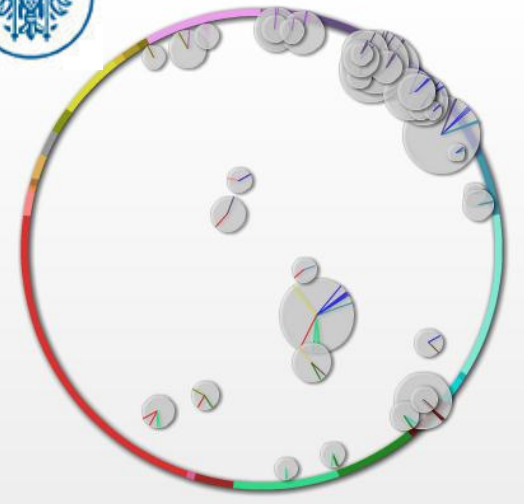
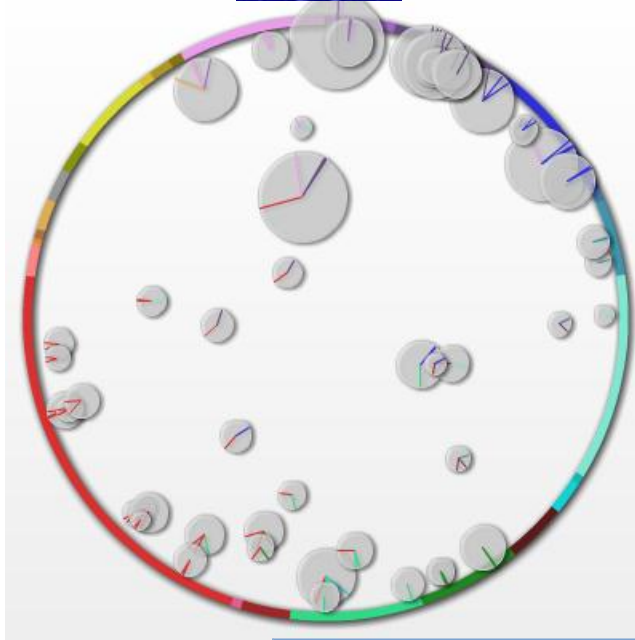
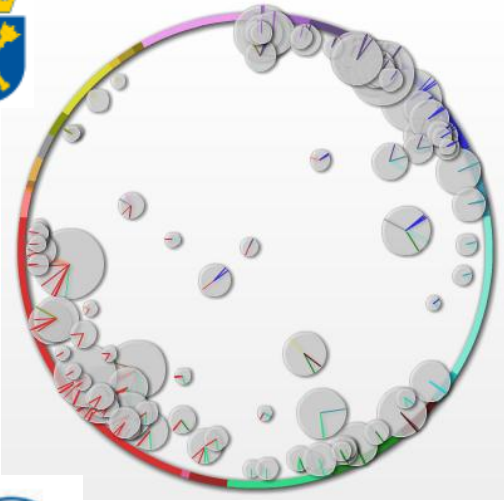
- UMK contributes to 2,6% of all polish articles indexed in Scopus
- Low number of Citations per Article (CPA) of UMK is correlated with low international collaboration
- 31% of articles are co-authored international in total, which is the lowest of 5 compared universities

NOTE: 5 years (2006-2010) data was used for this analysis

Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012

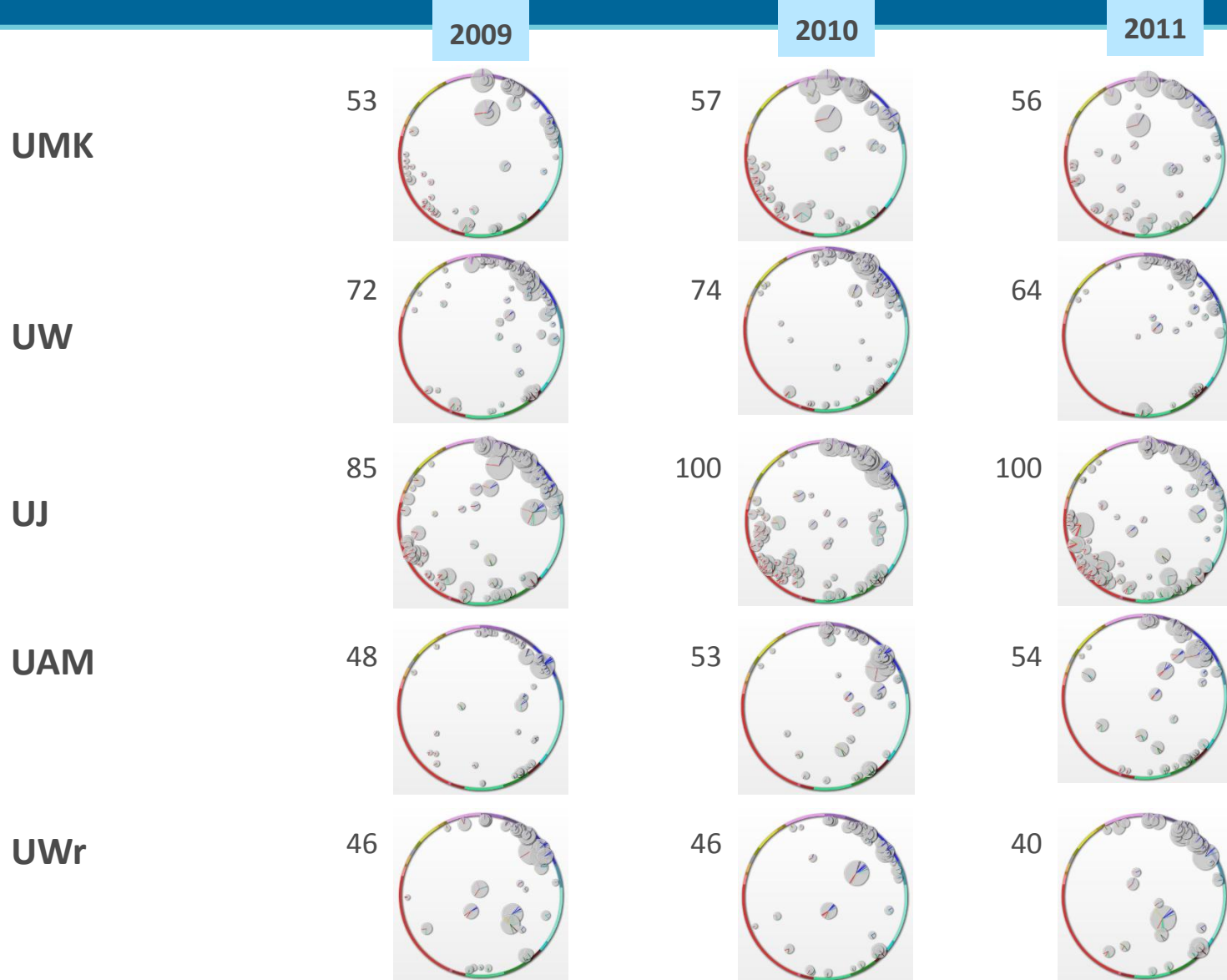


Number and structure of competencies



Number of Competencies	
UW	64
UJ	100
UMK	56
UAM	54
UWr	40

Competencies development over time



Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012



Structure of the Research Strength



- UJ and UMK show competencies in Medicine, driven by the Medical Departments
- Smaller universities (UMK, UAM and UW_r) develop more interdisciplinary research than big ones (UW, UJ)
- Number of competencies is stagnant as compared to key world universities. Slow development of interdisciplinary competencies – UMK and UJ in lead. Is this a positive influence of medical faculties?
- Overall:
 - Warsaw and Jagiellonian are most prolific
 - highest article output
 - more competencies
 - UMK similar to Wroclaw and AMU in article output, but due to quality of research and diversity (Medical Dept) shows more competencies than both of them.



Some Facts on UMK and it's peers						
	Size Total	Number of Researchers 2010	Publications Total (2007-2011)	Number of Competencies	Publications per Researcher	Competencies per 100 Researchers
UMK	40000	2000	3 818	56	1,9	2,8
UW	60000	3240	6 446	64	2,0	2,0
UJ	55000	3650	8 325	100	2,3	2,7
UAM	53000	3000	3 894	54	1,3	1,8
UWr	45000	1700	3 332	40	2,0	2,4

- If normalized, in terms of article output UMK is comparable with other universities
- Normalization per 100 Researchers shows excellent rate of competencies in comparison with peers

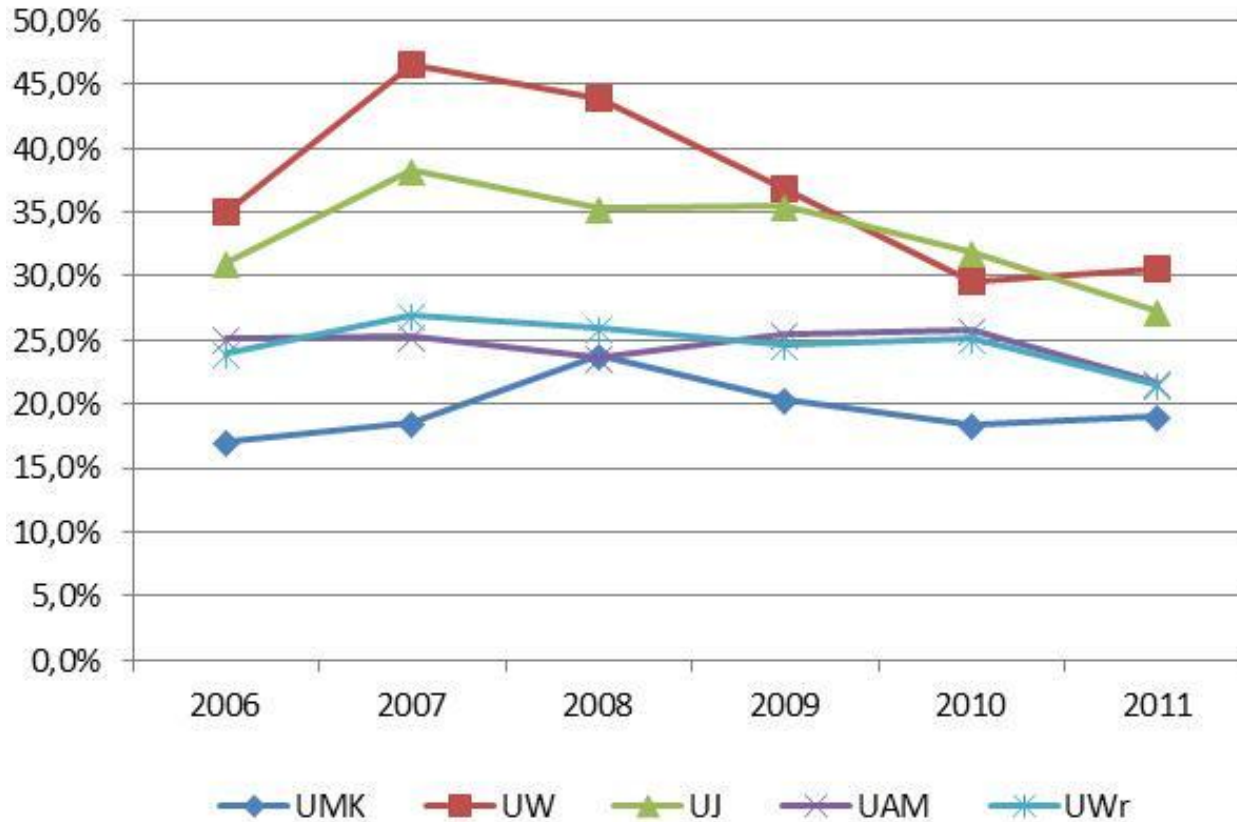
UMK and its research areas

Publications, Authors and Co-Authorships

International collaboration with top countries



Internationally coauthored articles as % of all articles



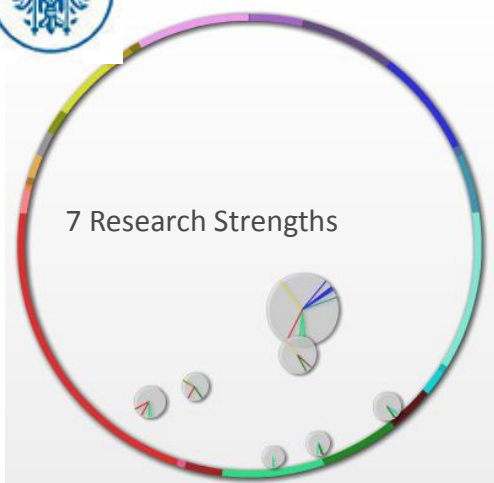
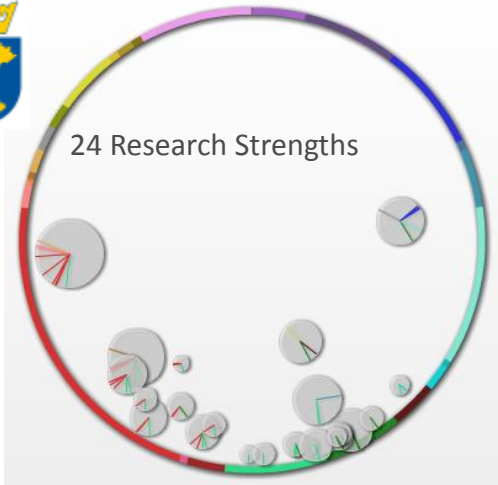
* International are the Top 11 publishing countries worldwide: United States, United Kingdom, China, Japan, Germany, France, Spain, Canada, Italy, Russia, India



Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012

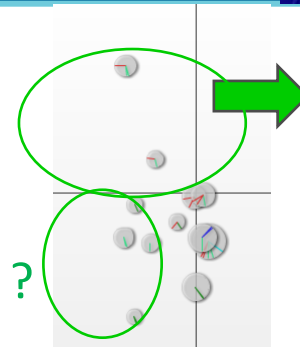
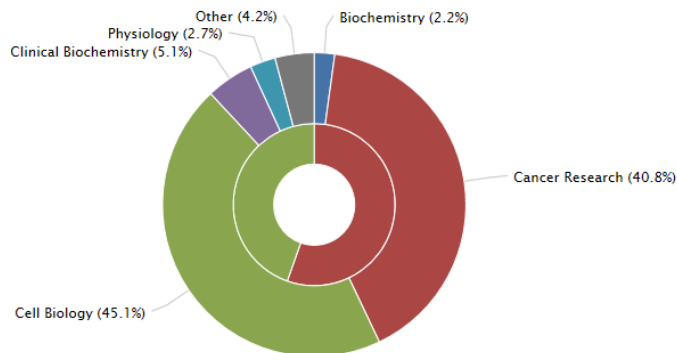


Biology/Biotechnology/Biochemistry/Agriculture



Competency	Authors at this institution	Keywords
DC #3	Jaruga P.; Oliński R.; Gackowski D.	DNA Glycosylases; DNA Repair; DNA Damage
EC #6	Zaremba T.; Zur R.; Zdzienicka M.Z.	Poly(ADP-ribose) Polymerases; DNA Repair; Neoplasms
EC #10	Kita E.; Marai H.; Lisiak R.	Chromium; Insulin; Diet
EC #17	Ulrich W.; Szpila K.	nestedness; species occurrence; species diversity
EC #21	Nowicki A.; Kowalewski J.; Szwed A.	Colorectal Neoplasms; Pneumonectomy; Fistula
EC #24	Szyk E.; Łakomska I.; Pazderski L.	Nuclear magnetic resonance; Magnetic Resonance Spectroscopy; Nuclear Magnetic Resonance, Biomolecular
EC #31	Grzanka D.; Gackowska L.; Izdebska M.	Actins; Cells; Cell Nucleus
EC #43	Kęsy J.M.; Kopcewicz J.; Wilimowicz E.	gibberellins; flowering; plants
EC #45	Drewna T.A.; Styczyński J.; Wolski Z.	Prostatic Neoplasms; Prostate; Neoplastic Stem Cells
EC #48	Szpila K.; Jarczyk G.	Larva; Debridement; Diptera

Biology/Biotechnology – UMK competencies



560 articles within
Biology/Biotechnol
ogy/Biochemistry/
Agriculture.

Outer ring: All published articles, by subject area
Inner ring: Articles in competencies, by subject area



Authors within Biochemistry, Genetics and Molecular Biology

Top authors at Nicolaus Copernicus University by number of articles within Biochemistry, Genetics and Molecular Biology (2007-2011)

Author	Articles published at this institution	Articles published all institutions	Articles in competencies
1. Wicherek Ł.	5	21	20
2. Oliński R.	25	25	13
3. Gackowski D.	17	17	11
4. Jaruga P.	10	17	11
5. Basta P.	4	12	10
6. Siomek A.	15	15	9
7. Różalski R.	14	14	9
8. Pazderski L.	12	12	9
9. Grzanka D.	12	12	7
10. Dziaman T.	12	12	6
11. Grzanka A.A.	11	11	6
12. Szłyk E.	10	10	6
13. Józwicki W.	9	9	6
14. Gackowska L.	8	8	6
15. Drewna T.A.	23	23	5

Earth and Planetary Sciences



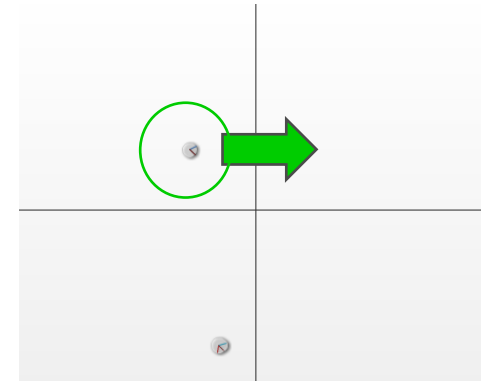
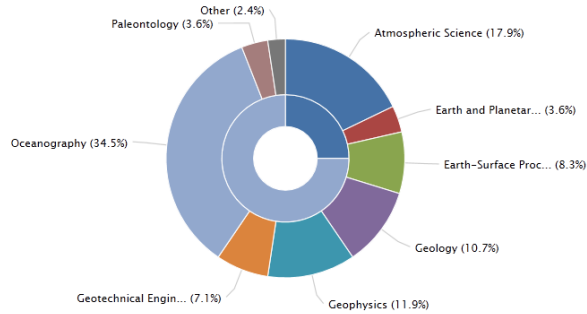
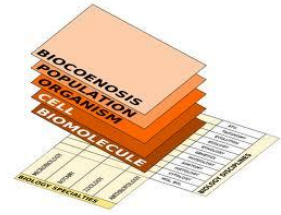
Competency	Authors at this institution	Keywords
EC #47	Lalke-Porczyk E.; Donderski W.; Swiontek Brzezinska M.S.	Chitinase; Biodegradation; Chitin
EC #56	Kujawski W.; Buczkowski R.; Cichosz M.	Cheeses; Fermentation; Ethanol



Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012



Earth Sciences – UMK competencies



69 articles within Earth Sciences

Outer ring: All published articles, by subject area
Inner ring: Articles in competencies, by subject area



Authors within Earth and Planetary Sciences

Top authors at Nicolaus Copernicus University by number of articles within Earth and Planetary Sciences (2007-2011)

Author	Articles published at this institution	Articles published all institutions	Articles in competencies
1. Donderski W.	9	9	6
2. Lalke-Porczyk E.	6	6	6
3. Swiontek Brzezinska M.S.	6	6	5
4. Walczak M.	5	5	2
5. Buczkowski R.	2	2	2
6. Cichosz M.	2	2	2
7. Igliński B.	2	2	2
8. Kujawski W.	2	2	1
9. Kujawski W.M.	2	2	1
10. Walczak M.	1	1	1
11. Iglińska A.	1	1	1
12. Brzezinska M.S.	1	1	1
13. Buszewski B.	6	6	0
14. Sobota I.	4	4	0
15. Wysota W.	4	4	0



Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012



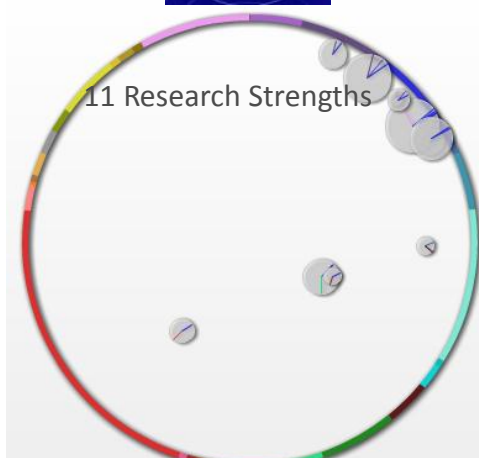
Chemistry



13 Research Strengths



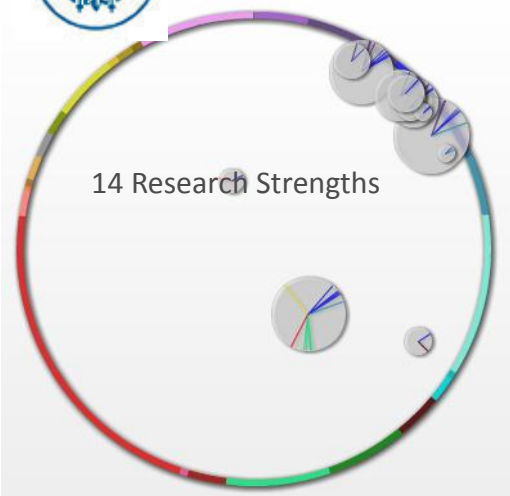
11 Research Strengths



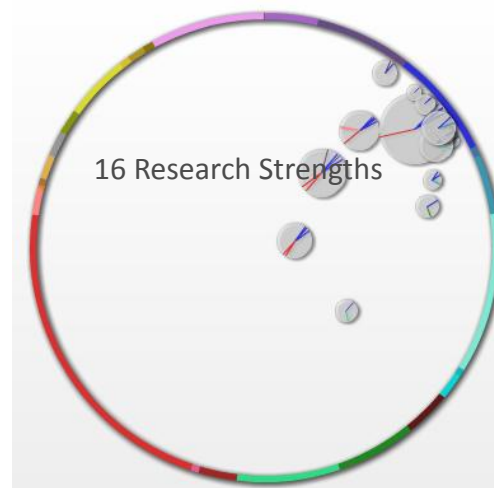
14 Research Strengths



14 Research Strengths

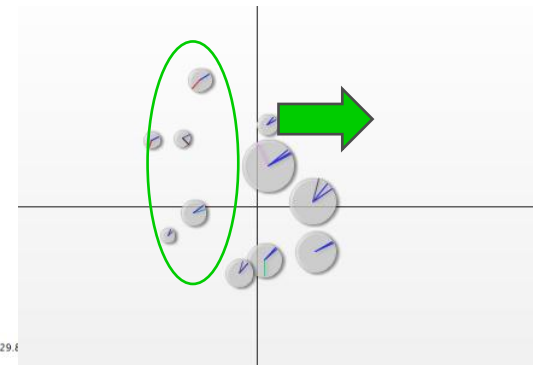


16 Research Strengths

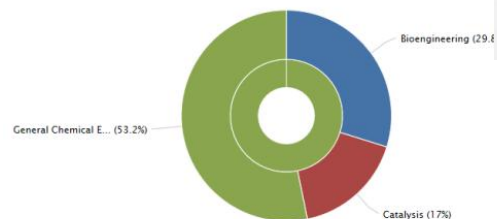
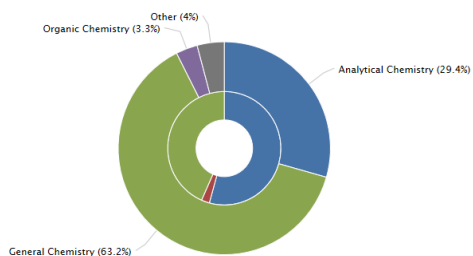


Competency	Authors at this institution	Keywords
DC #2	Buszewski B.; Kowalska S.; Olszowy P.	Ionic liquids; Solid Phase Microextraction; Toxicity
DC #18	Furmaniak S.; Gauden P.A.; Terzyk A.P.	Activated carbon; Adsorption; Phenols
EC #24	Szlyk E.; Łakomska I.; Pazderski L.	Nuclear magnetic resonance; Magnetic Resonance Spectroscopy; Nuclear Magnetic Resonance; Biomolecular
EC #26	Cysewski P.; Kaczmarek A.; Zalesny R.	Azobenzene; isomerization; Photoisomerization
EC #29	Buszewski B.; Ligor T.; Ligor M.	Volatile Organic Compounds; Breath Tests; Biological Markers
EC #33	Trypuć M.; Druzyński S.; Białowicz K.	Publishing; fires; Carbon fibers
EC #37	Gauden P.A.; Terzyk A.P.; Furmaniak S.	integrals; paths; time
EC #49	Buszewski B.; Bocian S.; Rychlicki G.	Chromatography; Reverse-Phase; Columns (structural); Liquid chromatography
EC #53	Szlyk E.; Szydłowska-Czerniak A.; Szydłowska-Czerniak A.	Antioxidants; Oils; Olea
EC #55	Kakareko T.; Kobak J.; Kakareko B.T.	Neogobius; Gobiidae; Neogobius melanostomus
EC #56	Kojanowski W.; Buszewski B.	Chemos; Fermentation; Ethanol

Chemistry – UMK competencies



676 articles within Chemistry.



Authors within Chemistry

Top authors at Nicolaus Copernicus University by number of articles within Chemistry (2007-2011)

Author	Articles published at this institution	Articles published all institutions	Articles in competencies
1. Buszewski B.	121	121	51
2. Bocian S.	20	20	17
3. Kaliszan R.	7	28	15
4. Szlyk E.	38	38	14
5. Bączek T.	12	34	14
6. Terzyk A.P.	21	21	13
7. Gauden P.A.	22	22	12
8. Ligor T.	19	19	11
9. Łakomska I.	11	11	10
10. Kowalska S.	11	11	10
11. Furmaniak S.	17	17	9
12. Marszał M.P.	6	8	7
13. Oleżny P.	8	8	6

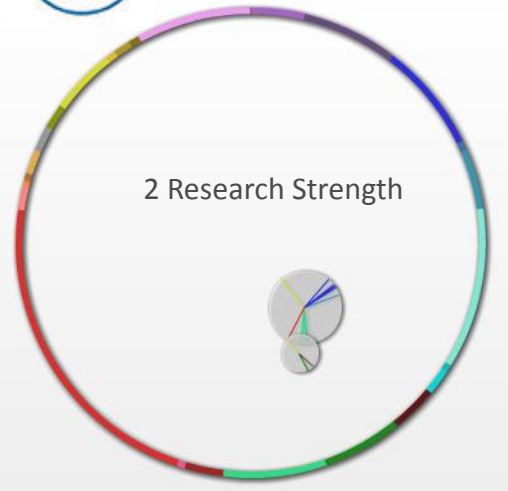


Authors within Chemical Engineering

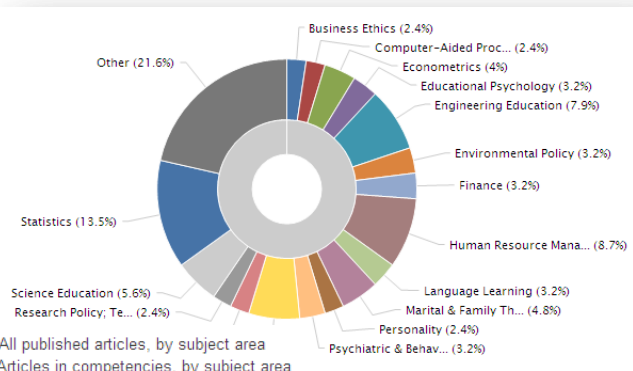
Top authors at Nicolaus Copernicus University by number of articles within Chemical Engineering (2007-2011)

Author	Articles published at this institution	Articles published all institutions	Articles in competencies
1. Kujawski W.	5	5	4
2. Kujawski W.M.	2	2	2
3. Koter S.I.a.	2	2	1
4. Buczkowski R.	2	2	1
5. Igliński B.	2	2	1
6. Koter I.	1	1	1
7. Cichosz M.	1	1	1
8. Iglińska A.	1	1	1
9. Buszewski B.	6	6	0
10. Kozakiewicz A.	6	6	0
11. Welniak M.X.	5	5	0
12. Wojtczak A.	5	5	0
13. Szlyk E.	4	4	0
14. Lelko Beata E.	2	2	0

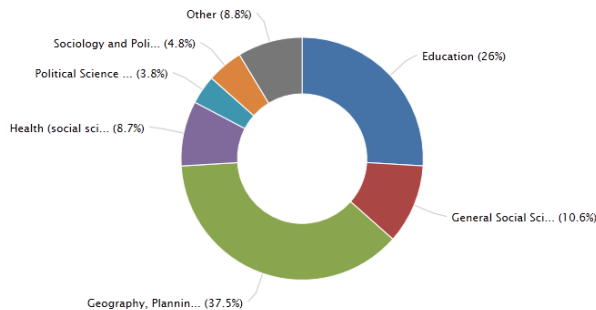
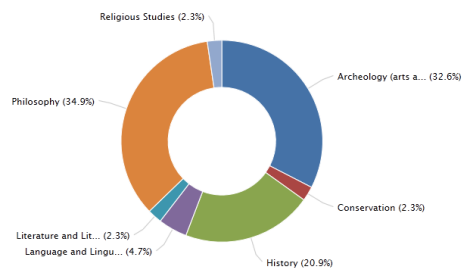
Social Sciences, Arts and Humanities



Social Sciences – UMK competencies



115 articles within Social Sciences.



Authors within Arts and Humanities

Top authors at Nicolaus Copernicus University by number of articles within Arts and Humanities (2007-2011)

Author	Articles published at this institution	Articles published all institutions	Articles in competencies
1. Adamczak R.	4	4	0
2. Wysota W.	4	4	0
3. Meller J.	4	6	0
4. Koprowski M.	3	3	0
5. Noryskiewicz A.M.	3	3	0
6. Makowiecki D.	3	3	0
7. Grzybowski T.	2	2	0
8. Stankiewicz P.	2	2	0
9. Karwacki A.	2	2	0
10. Szlendak T.	2	2	0
11. Molewski P.	1	1	0

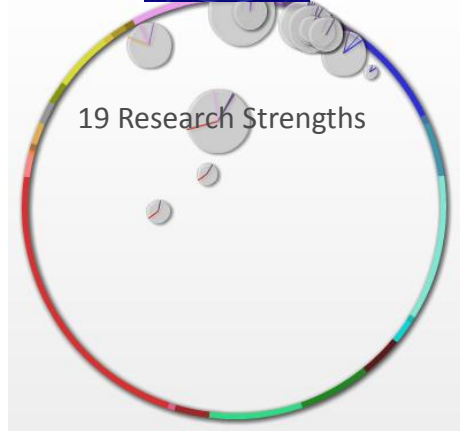


Authors within Social Sciences

Top authors at Nicolaus Copernicus University by number of articles within Social Sciences (2007-2011)

Author	Articles published at this institution	Articles published all institutions	Articles in competencies
1. Grzybowski T.	9	9	0
2. Mikolajewski D.	5	5	0
3. Plekiewski F.	4	4	0
4. Łoś-Rycharska E.	4	4	0
5. Wozniak M.	4	4	0
6. Nieclawska A.	4	4	0
7. Stankiewicz P.	3	3	0
8. Czerwionka-Szaflarska M.	3	3	0
9. Afeltowicz Ł.	3	3	0
10. Karwacki A.	3	3	0

Mathematics, Physics and Astronomy



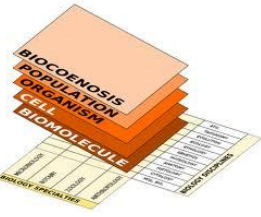
Competency	Authors at this institution	Keywords
DC #1	Wojtkowski M.; Kowalczyk A.A.; Szkulmowski M.	Optical tomography; Tomography, Optical Coherence; Imaging techniques
EC #5	Goździewski K.; Migaszewski C.; Maciejewski G.	planets; planet; eccentricity
EC #7	Górniewicz L.; Ćwiszewski A.; Gabor G.	Differential inclusions; Fixed point theorem; Result
DC #8	Duch W.; Jankowski N.; Grąbczewski K.	Learning systems; Algorithms; Classification (of information)
DC #9	Simson D.; Skowroński A.; Malicki P.	Algebra; Quiver; Module
DC #11	Lemańczyk M.; Fraczek K.M.; Brzykcy J.	Ergodic; Surface; Interval exchange transformation
DC #13	Chruściński D.; Kossakowski A.; Sarbicki G.	maps; Quantum optics; classes



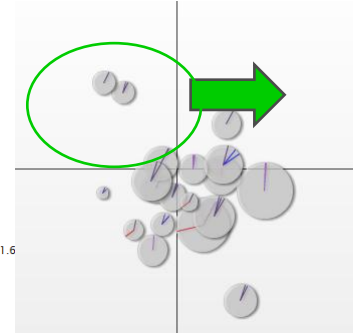
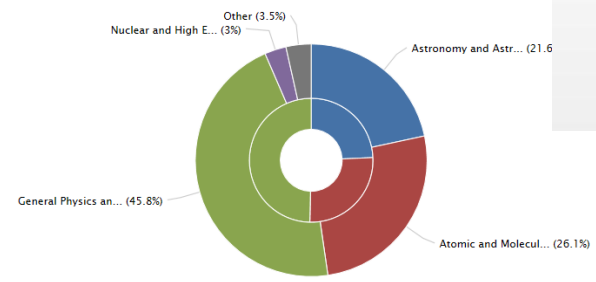
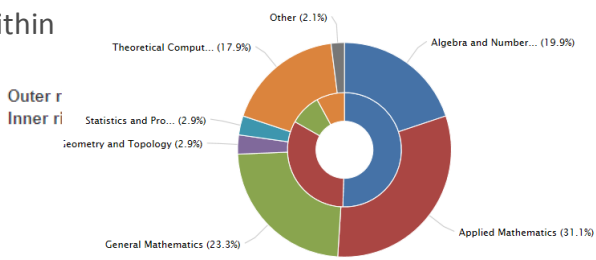
Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012



Mathematics, Physics and Astronomy – UMK competencies



1121 articles within
Math, Phys,
Astronomy



Authors within Mathematics

Top authors at Nicolaus Copernicus University by number of articles within Mathematics (2007-2011)

Author	Articles published at this institution	Articles published all institutions	Articles in competencies
1. Simson D.	20	20	17
2. Rytter W.	19	23	0
3. Skowroński A.	14	14	12
4. Lemańczyk M.	13	13	11
5. Golański M.	11	11	0
6. Górniewicz L.	9	9	8
7. Fraczek K.M.	9	9	8
8. Ćwieszewski A.	8	8	7
9. Rybicki S.M.	8	8	0
10. Tomilov Y.V.	8	8	0

Authors within Physics and Astronomy

Top authors at Nicolaus Copernicus University by number of articles within Physics and Astronomy (2007-2011)

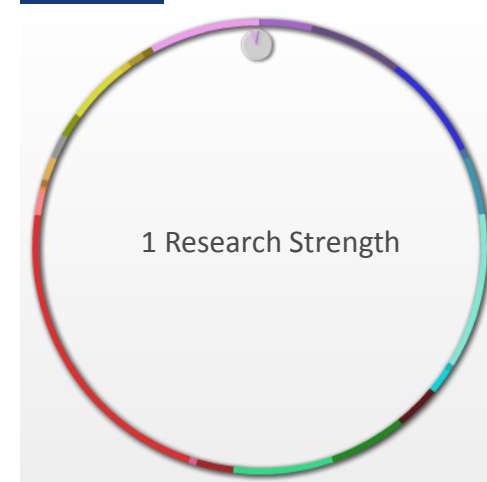
Author	Articles published at this institution	Articles published all institutions	Articles in competencies
1. Katarzyński K.	53	54	0
2. Wojtkowski M.	41	41	32
3. Chruściński D.	35	35	29
4. Szkulmowski M.	33	33	27
5. Kowalczyk A.A.	32	32	25
6. Furmaniak S.	30	30	27
7. Firszt F.	30	30	14
8. Krełowski J.	29	29	23
9. Kossakowski A.	28	32	29



Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012

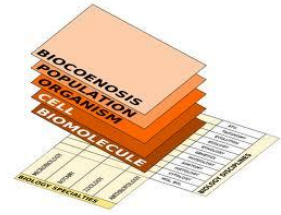


Computer Sciences

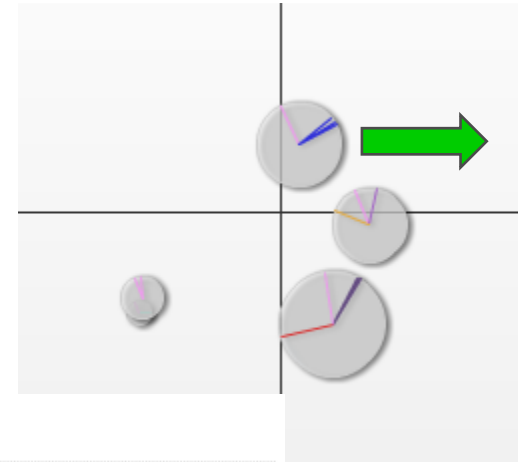
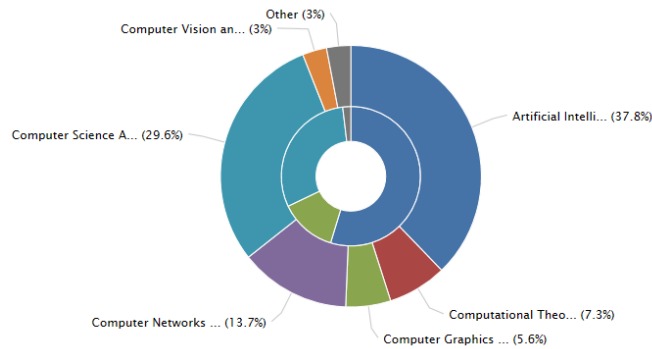


Competency	Authors at this institution	Keywords
DC #1	Wojtkowski M.; Kowalczyk A.A.; Szkulmowski M.	Optical tomography; Tomography, Optical Coherence; Imaging techniques
DC #2	Buszewski B.; Kowalska S.; Olszowy P.	Ionic liquids; Solid Phase Microextraction; Toxicity
DC #8	Duch W.; Jankowski N.; Grąbczewski K.	Learning systems; Algorithms; Classification (of information)
EC #22	Duch W.; Maszczyk T.; Grochowski M.	Feature extraction; Classification (of information); Algorithms
EC #39	Śluzek A.	Image matching; Image retrieval; Experiments

Computer Sciences – UMK competencies



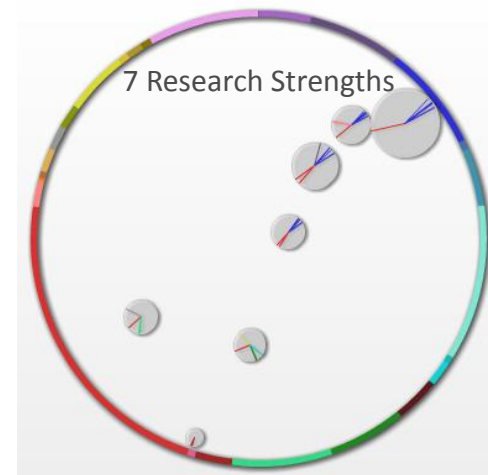
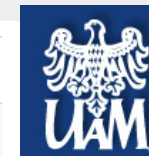
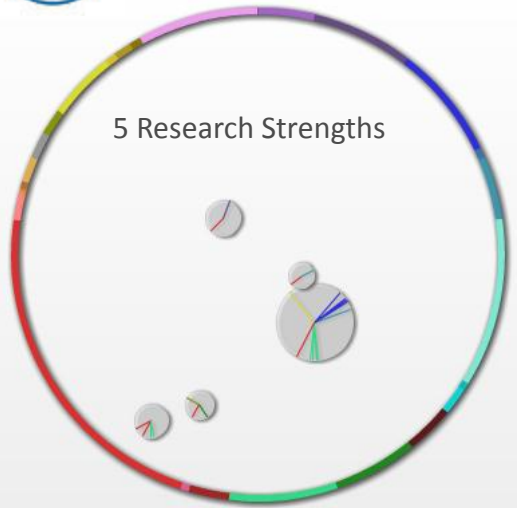
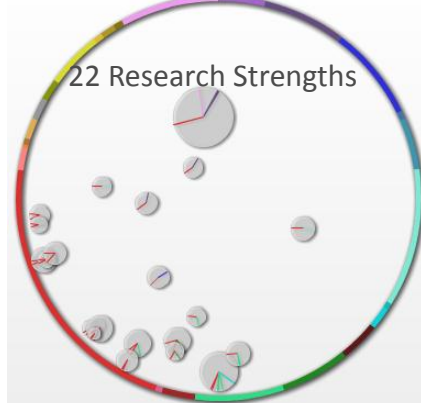
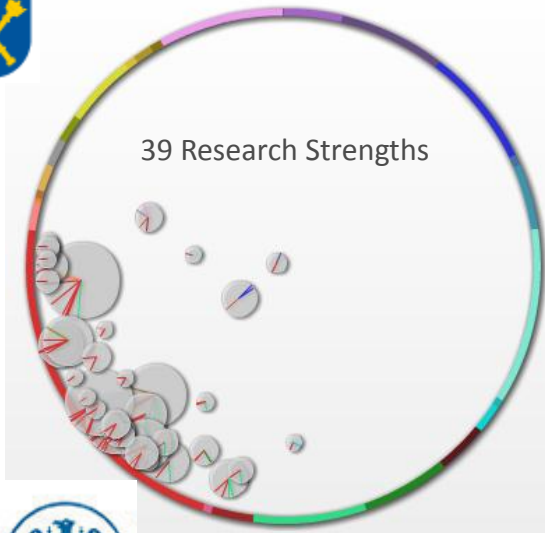
204 articles within
Computer Sciences



Authors within Computer Science

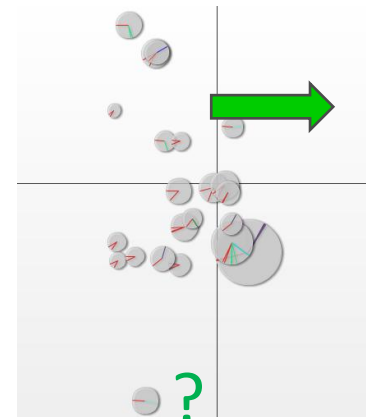
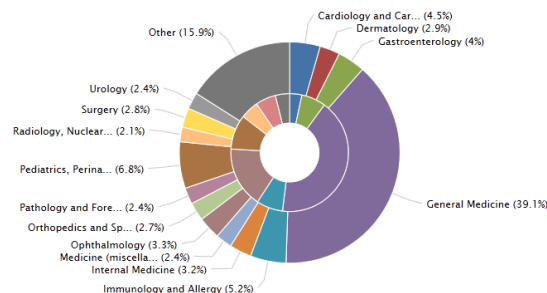
Top authors at Nicolaus Copernicus University by number of articles within Computer Science (2007-2011)

Author	Articles published at this institution	Articles published all institutions	Articles in competencies	
1. Duch W.	32	32	15	<div style="width: 45%;"></div>
2. Śluzek A.	10	32	12	<div style="width: 37.5%;"></div>
3. Targowski P.	10	10	10	<div style="width: 100%;"></div>
4. Kowalczyk A.A.	14	14	9	<div style="width: 64.3%;"></div>
5. Jankowski N.	9	9	9	<div style="width: 100%;"></div>
6. Góra M.	9	9	7	<div style="width: 77.8%;"></div>
7. Maszczyk T.	7	7	6	<div style="width: 85.7%;"></div>
8. Grąbczewski K.	7	7	6	<div style="width: 85.7%;"></div>
9. Wojtkowski M.	10	10	5	<div style="width: 50%;"></div>
10. Iwanicka M.	5	5	5	<div style="width: 100%;"></div>
11. Kwiatkowska E.A.	5	5	5	<div style="width: 100%;"></div>
12. Sylwestrzak M.	5	5	5	<div style="width: 100%;"></div>



Competency	Authors at this institution	Keywords
DC #1	Wojtkowski M.; Kowalczyk A.A.; Szkulmowski M.	Optical tomography; Tomography, Optical Coherence; Imaging techniques
DC #3	Jaruga P.; Oliński R.; Gackowski D.	DNA Glycosylases; DNA Repair; DNA Damage
EC #4	Czerwionka-Szaflarska M.; Adamska I.; Kupczyk K.	Food Hypersensitivity; Immunoglobulin E; Food
EC #6	Zaremba T.; Zur R.; Zdzienicka M.Z.	Poly(ADP-ribose) Polymerases; DNA Repair; Neoplasms
EC #10	Kita E.; Marai H.; Lisiak R.	Chromium; Insulin; Diet
EC #12	Jawień A.; Cierzniańska K.; Szewczyk M.T.	Varicose Veins; Leg Ulcer; Venous Insufficiency
EC #14	Czerwionka-Szaflarska M.; Zielińska-Duda H.; Zielińska I.	Helicobacter pylori; Pylorus; Infection
EC #16	Czerwionka-Szaflarska M.; Gąsiorowska J.; Mierzwa G.	Inflammatory Bowel Diseases; Crohn Disease; Colitis, Ulcerative
EC #21	Nowicki A.; Kowalewski J.; Szwed A.	Colorectal Neoplasms; Pneumonectomy; Fistula
EC #23	Budzyński J.; Kłopocka M.	Chest Pain; Gastroesophageal Reflux;

Medicine – UMK competencies



1425 articles within

Medicine

Outer ring: All published articles, by subject area
 Inner ring: Articles in competencies, by subject area



Authors within Medicine

Top authors at Nicolaus Copernicus University by number of articles within Medicine (2007-2011)

Author	Articles published at this institution	Articles published all institutions	Articles in competencies	
1. Wojtkowski M.	34	37	25	
2. Czerwionka-Szaflarska M.	98	98	19	
3. Kowalczyk A.A.	21	21	15	
4. Szkulmowski M.	18	18	14	
5. Szaflarska-Popławska A.	32	32	11	
6. Bajraszewski T.	14	14	10	
7. Szkulmowska A.	13	13	10	
8. Styczyński J.	35	36	9	
9. Buszewski B.	20	20	8	
10. Kałużny J.J.	12	12	8	
11. Oliński R.	16	16	7	
12. Adamska I.	14	14	6	
13. Siomek A.	11	11	6	
14. Różalski R.	10	10	6	
15. Zielińska-Duda H.	9	9	6	
16. Manitius J.	38	38	5	
17. Stróżeczki P.	16	16	5	

Data source: SciVal Spotlight Map 2011, SciVerse Scopus – 15th January 2012



Conclusions

- UMK, UAM and UWr have flat article output, contrary to UJ and UW
- UMK is publishing at the same level (articles per researcher) as other key universities in Poland
- UMK has good recency in terms of referenced papers, however citation impact is the area for improvement
- UMK collaborates with many universities, but:
 - The level of international collaboration is below that of peers
 - there is no full overlap with universities where formal cooperation was initiated
- Hard sciences and medical specialties prevail in terms of subject areas
- Hard sciences contribute to competencies more than Medical specialties
- „Hard” sciences trend towards Computer and Decision Sciences, whilst „medical” specialties expand towards Biochemistry, Genetics and Molecular Biology and tend to collaborate with Chemistry and computer sciences
- There is a visible growth of interdisciplinary research areas
- 2/3 of UMK Competencies are in growing fields (article output increases annually worldwide)
- UMK has less competencies than Warsaw and Jagiellonian universities, but normalization per 100 Researchers shows excellent rate of competencies in comparison with peers
- Warsaw and Jagiellonian are most prolific and most effective research organisations
- UMK similar to UWr and UAM in article output, but due to quality of research and diversity shows more competencies than both of them

THANK YOU

Andrzej Tretyn

Piotr Gołkiewicz

Igor Hundziak