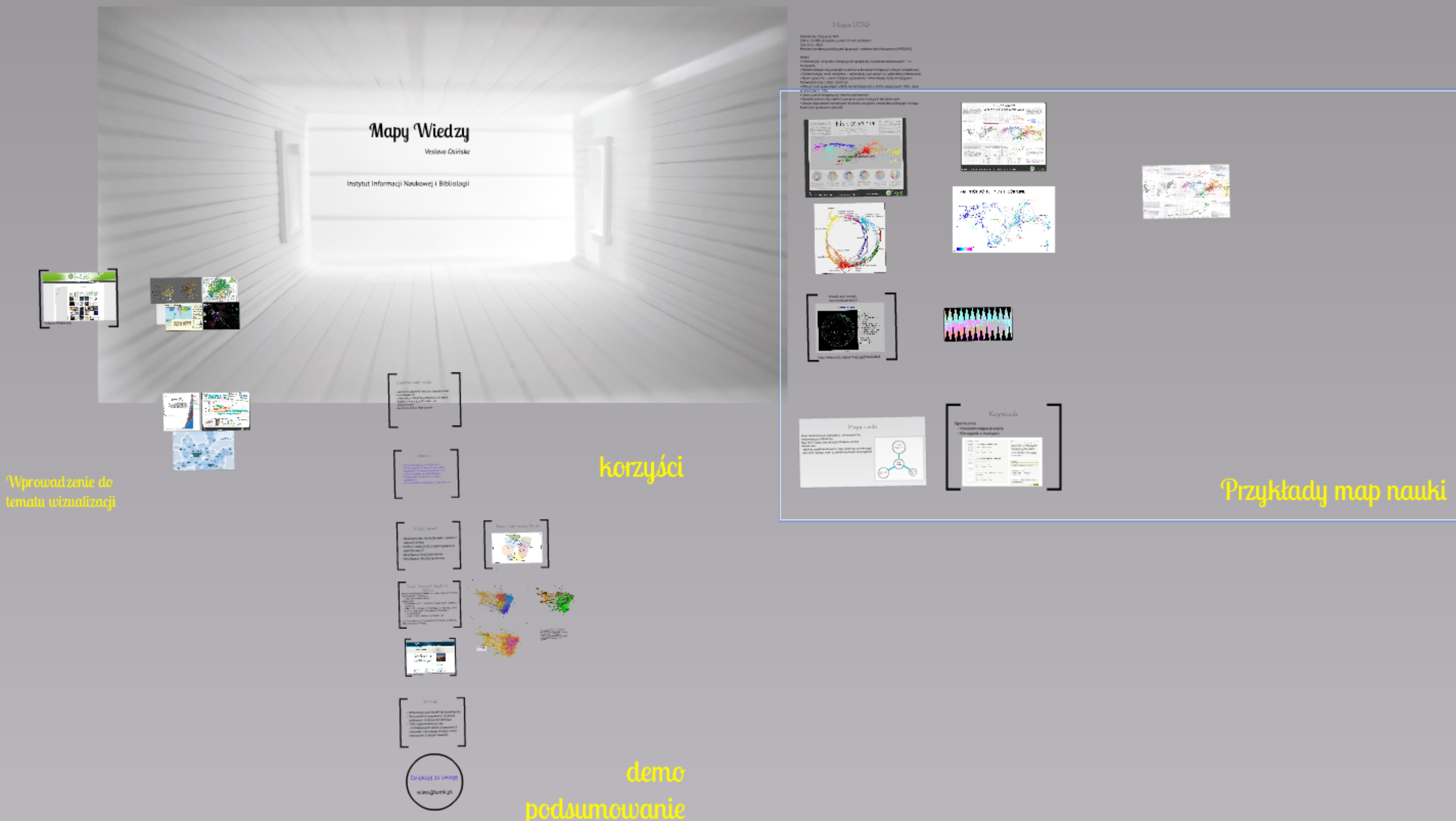
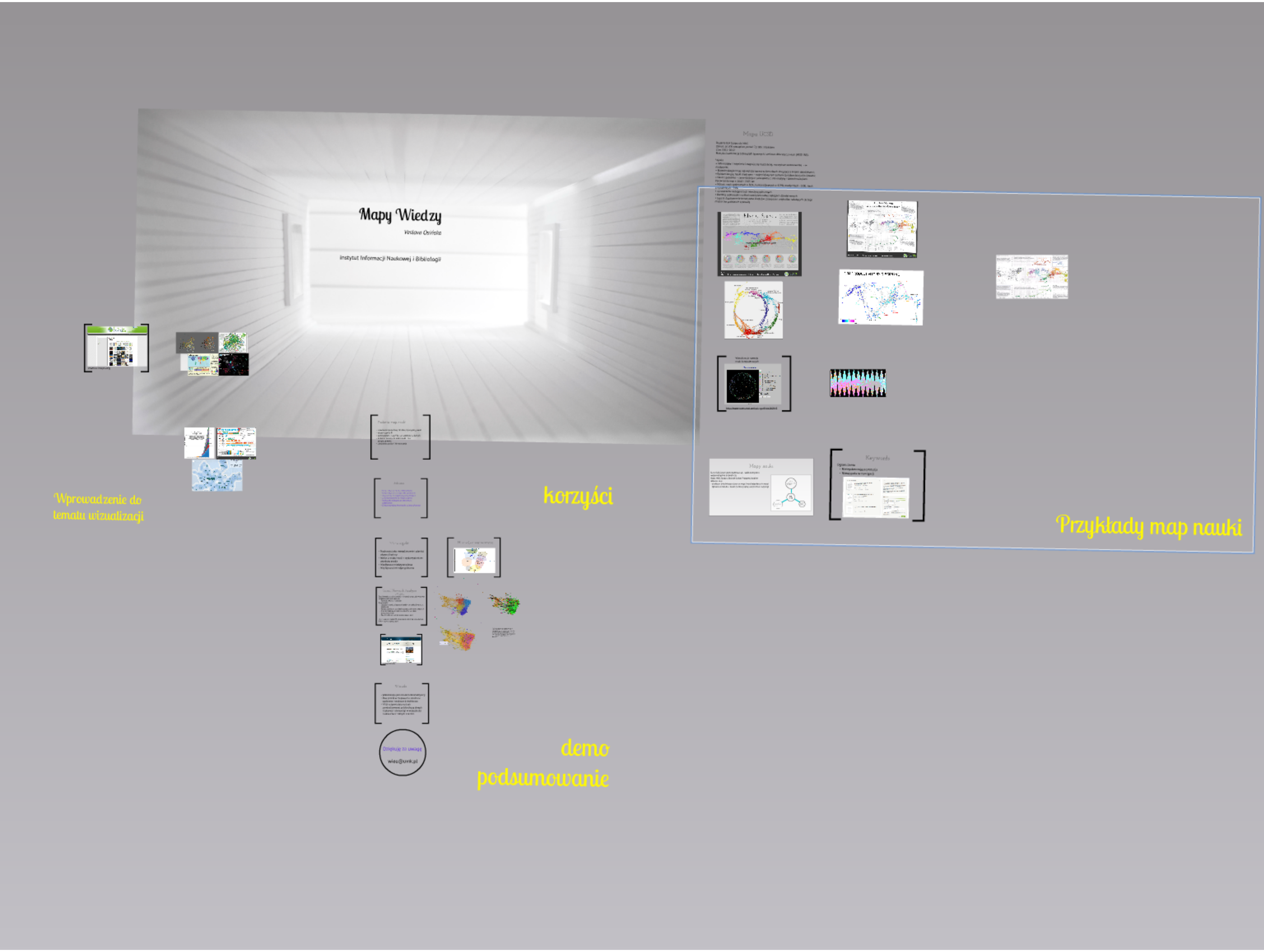


Mapy Wiedzy
Veslava Osińska
Instytut Informacji Naukowej i Bibliologii
Wprowadzenie do tematu wizualizacji
korzyści
Przykłady map nauki
demo
podsumowanie

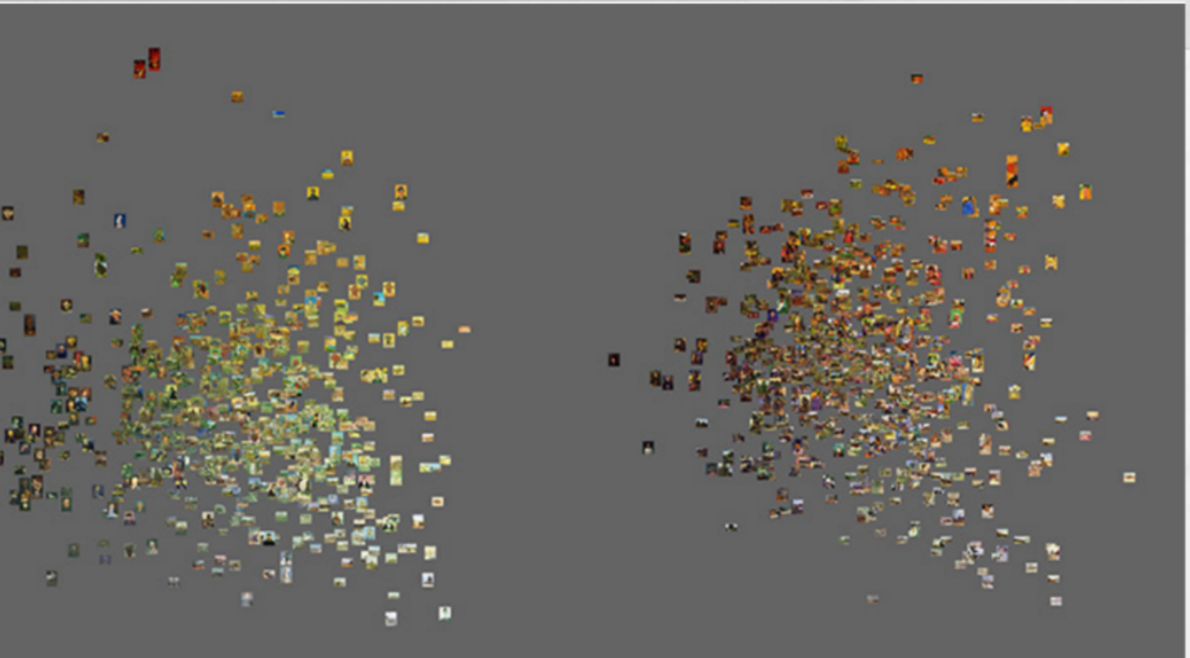
Mapy Wiedzy

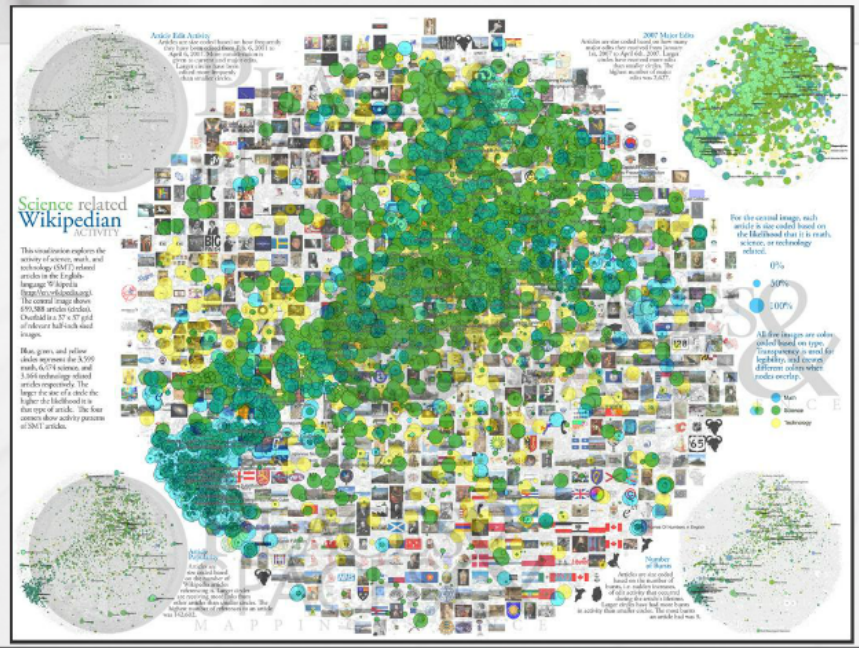
Veslava Osińska

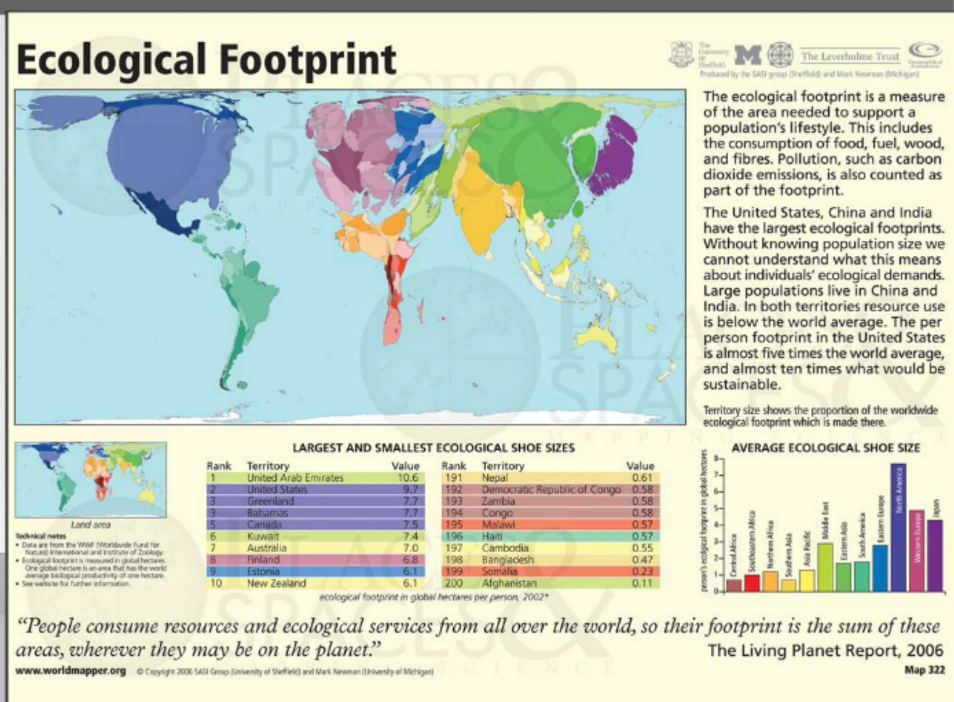
Instytut Informacji Naukowej i Bibliologii

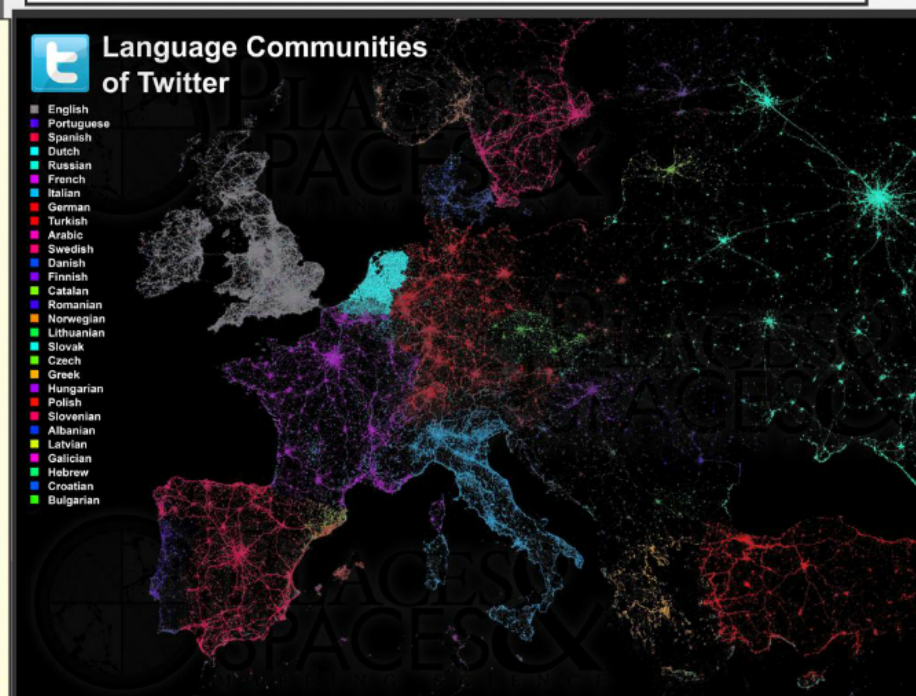

Mapy Wiedzy
Veslava Osińska
Instytut Informacji Naukowej i Bibliologii
Wprowadzenie do tematu wizualizacji
korzyści
Przykłady map nauki
demo
podsumowanie

www.scimaps.org



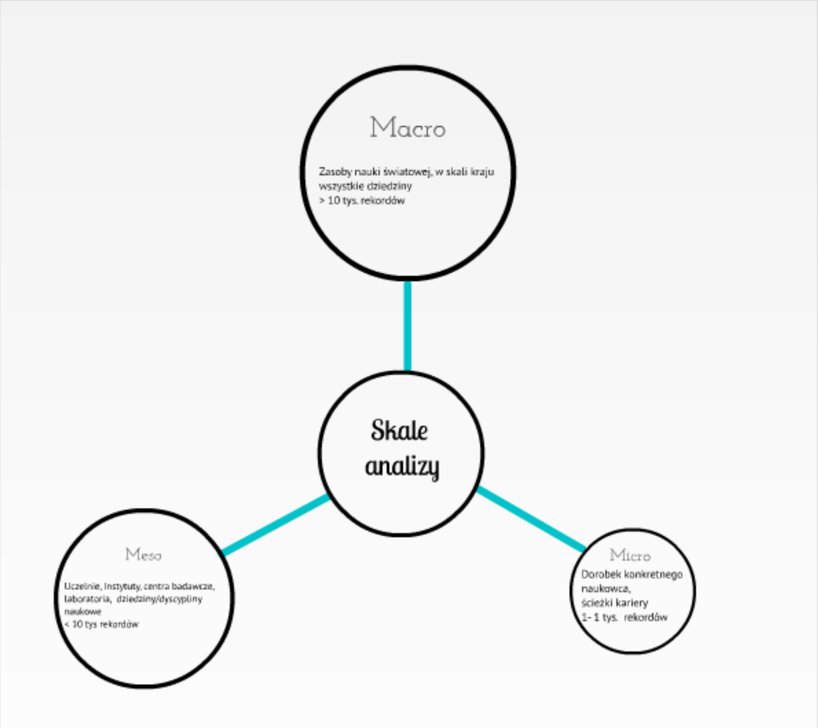

Science related
Wikipedian
ACTIVITY
For the central image, each article is size coded based on the likelihood that it is math, science, or technology related.
0%
50%
100%


Ecological Footprint
The Leverhulme Trust
The ecological footprint is a measure of the area needed to support a population's lifestyle. This includes the consumption of food, fuel, wood, and fibres. Pollution, such as carbon dioxide emissions, is also counted as part of the footprint.
The United States, China and India have the largest ecological footprints. Without knowing population size we cannot understand what this means about individuals' ecological demands. Large populations live in China and India. In both territories resource use is below the world average. The per person footprint in the United States is almost five times the world average, and almost ten times what would be sustainable.
Territory size shows the proportion of the worldwide ecological footprint which is made there.
Land area
Technical notes
• Data are from the WWF (Worldwide Fund for Nature) International and Institute of Zoology.
• Ecological footprint is measured in global hectares. One global hectare is an area that has the world average biological productivity of one hectare.
• See website for further information.
LARGEST AND SMALLEST ECOLOGICAL SHOE SIZES
Rank Territory Value
1 United Arab Emirates 10.6
2 United States 9.7
3 Greenland 7.7
3 Bahamas 7.7
5 Canada 7.5
6 Kuwait 7.4
7 Australia 7.0
8 Finland 6.8
9 Estonia 6.1
10 New Zealand 6.1
Rank Territory Value
191 Nepal 0.61
192 Democratic Republic of Congo 0.58
193 Zambia 0.58
194 Congo 0.58
195 Malawi 0.57
196 Haiti 0.57
197 Cambodia 0.55
198 Bangladesh 0.47
199 Somalia 0.23
200 Afghanistan 0.11
ecological footprint in global hectares per person, 2002*
AVERAGE ECOLOGICAL SHOE SIZE
Central Africa
Southeastern Africa
Northern Africa
Southern Asia
Asia Pacific
Middle East
Eastern Asia
South America
Eastern Europe
North America
Western Europe
Japan
"People consume resources and ecological services from all over the world, so their footprint is the sum of these areas, wherever they may be on the planet."
The Living Planet Report, 2006
www.worldmapper.org
© Copyright 2006 SASI Group (University of Sheffield) and Mark Newman (University of Michigan)
Map 322

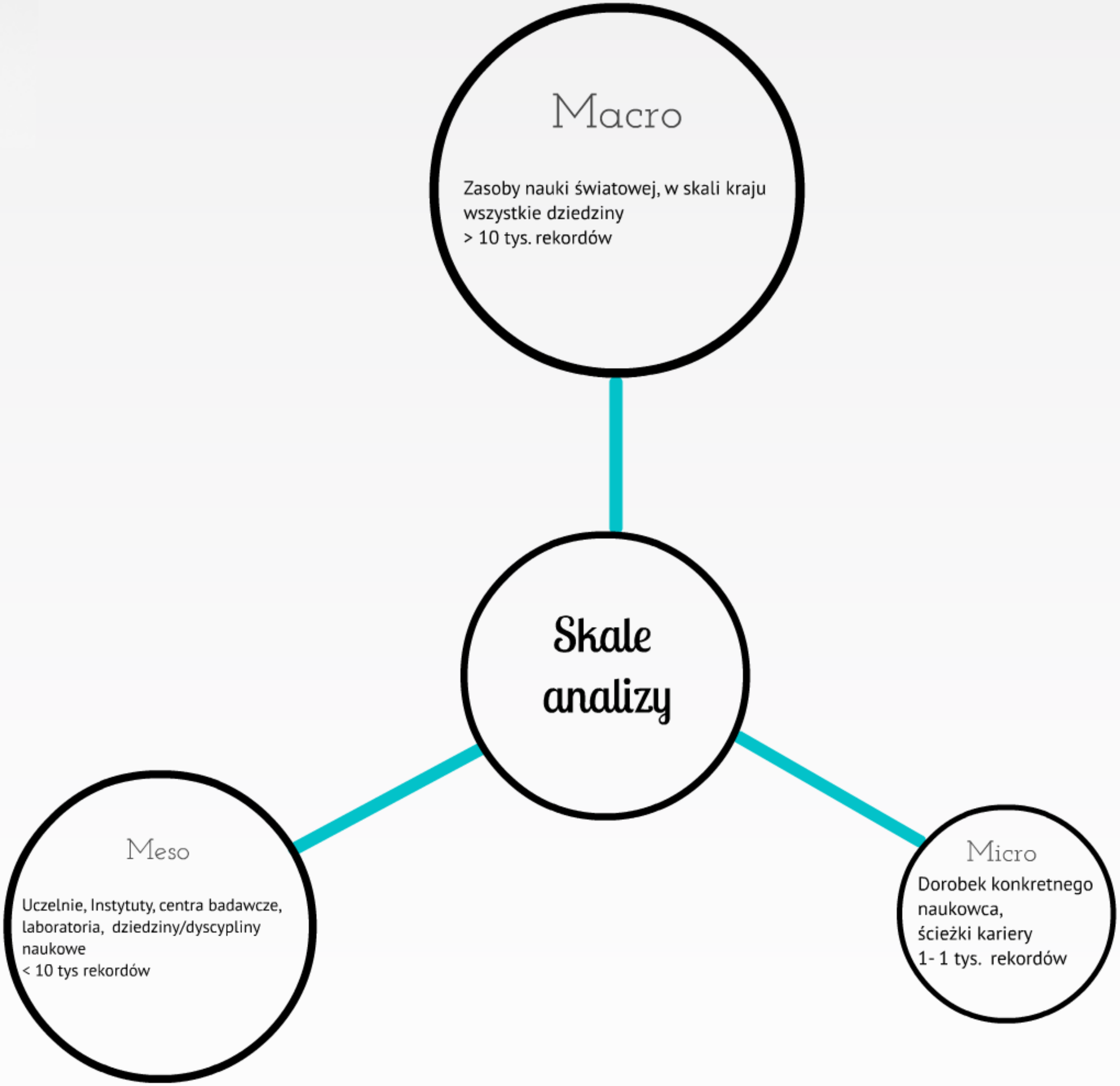

Language Communities of Twitter
English
Portuguese
Spanish
Dutch
Russian
French
Italian
German
Turkish
Arabic
Swedish
Danish
Finnish
Catalan
Romanian
Norwegian
Lithuanian
Slovak
Czech
Greek
Hungarian
Polish
Slovenian
Albanian
Latvian
Galician
Hebrew
Croatian
Bulgarian

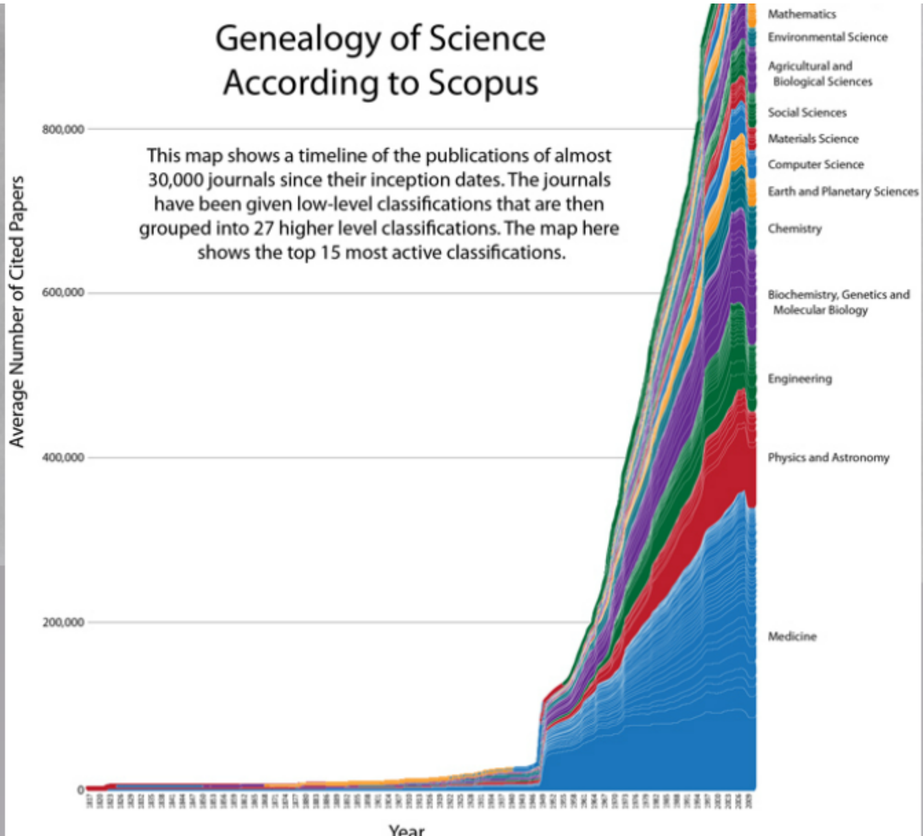
Mapy nauki

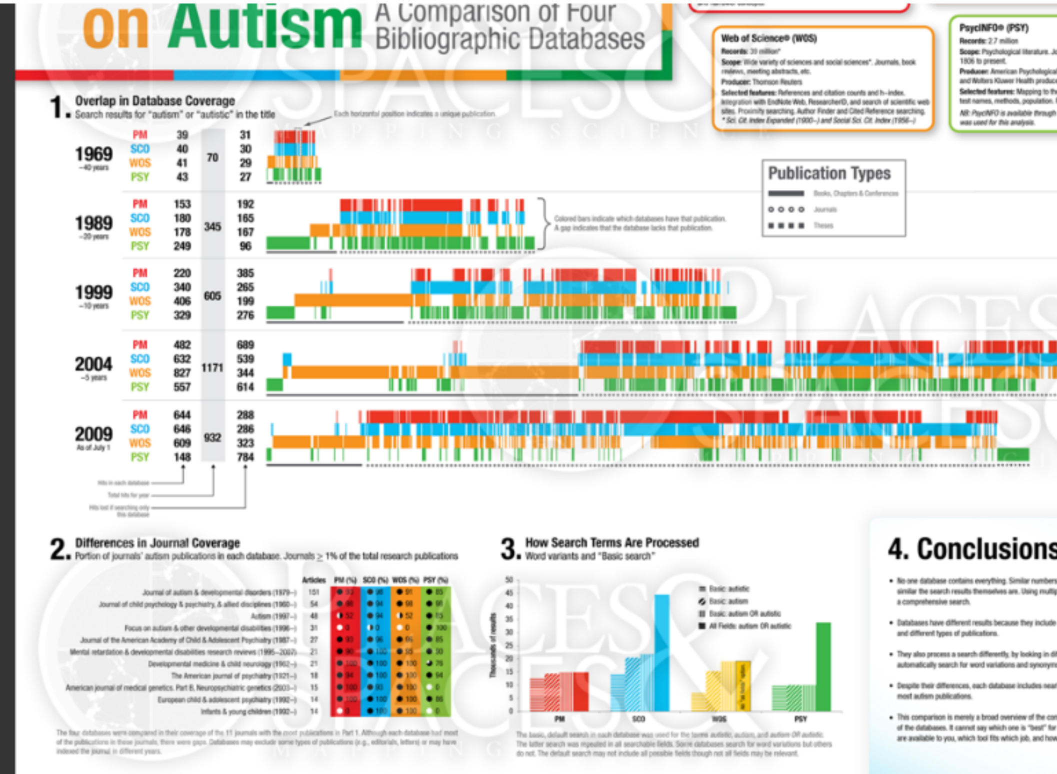
Dane: bibliometryczne (cytowania) , naukometryczne, webometryczne (altmetrics)
Bazy: WoS, Scopus, Google Scolar, Proquest, localne
Główne cele:
- struktura dziedzinowa (*science maps, knowledge domain maps)*
- dynamika rozwoju nauki (*scientography, longitudinal mapping*)



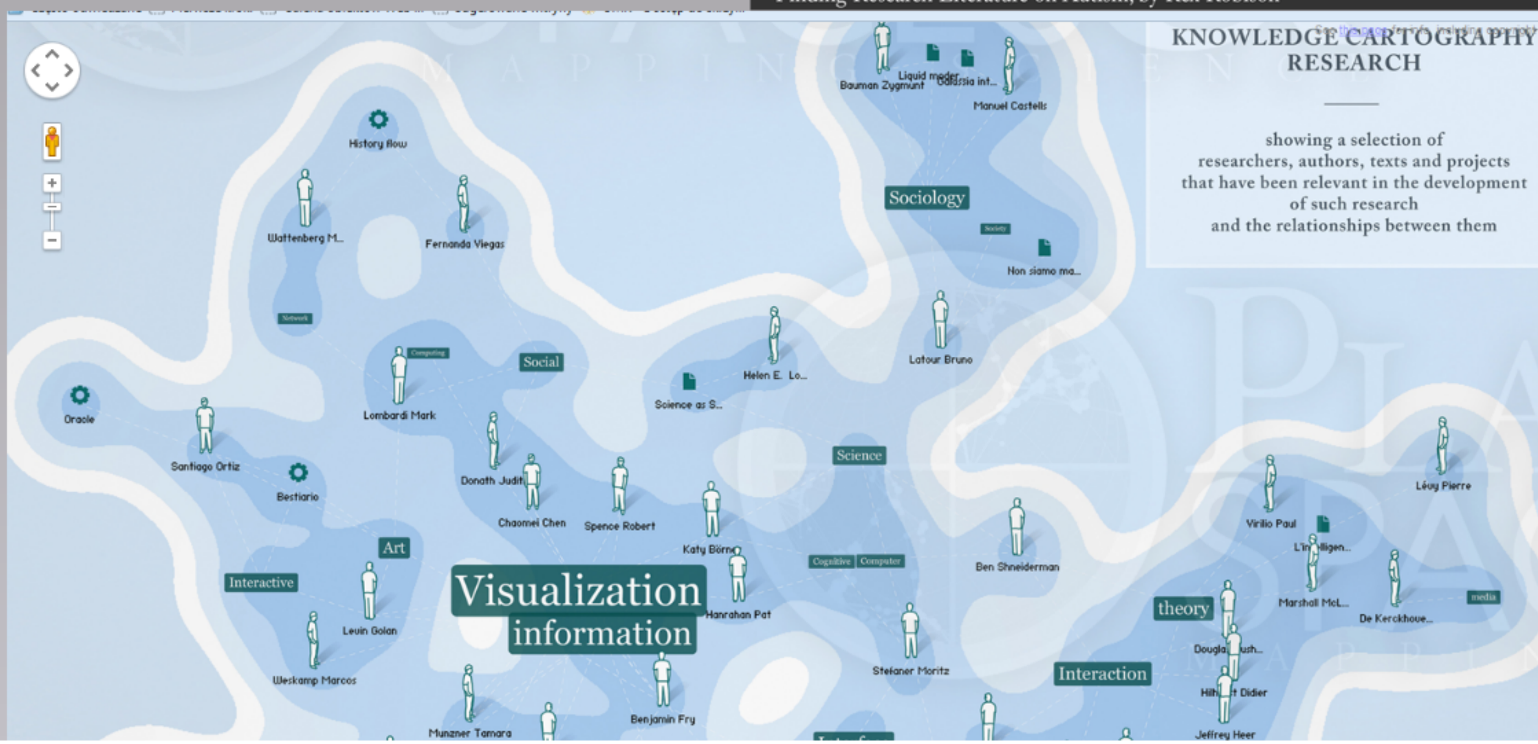
s)
g)

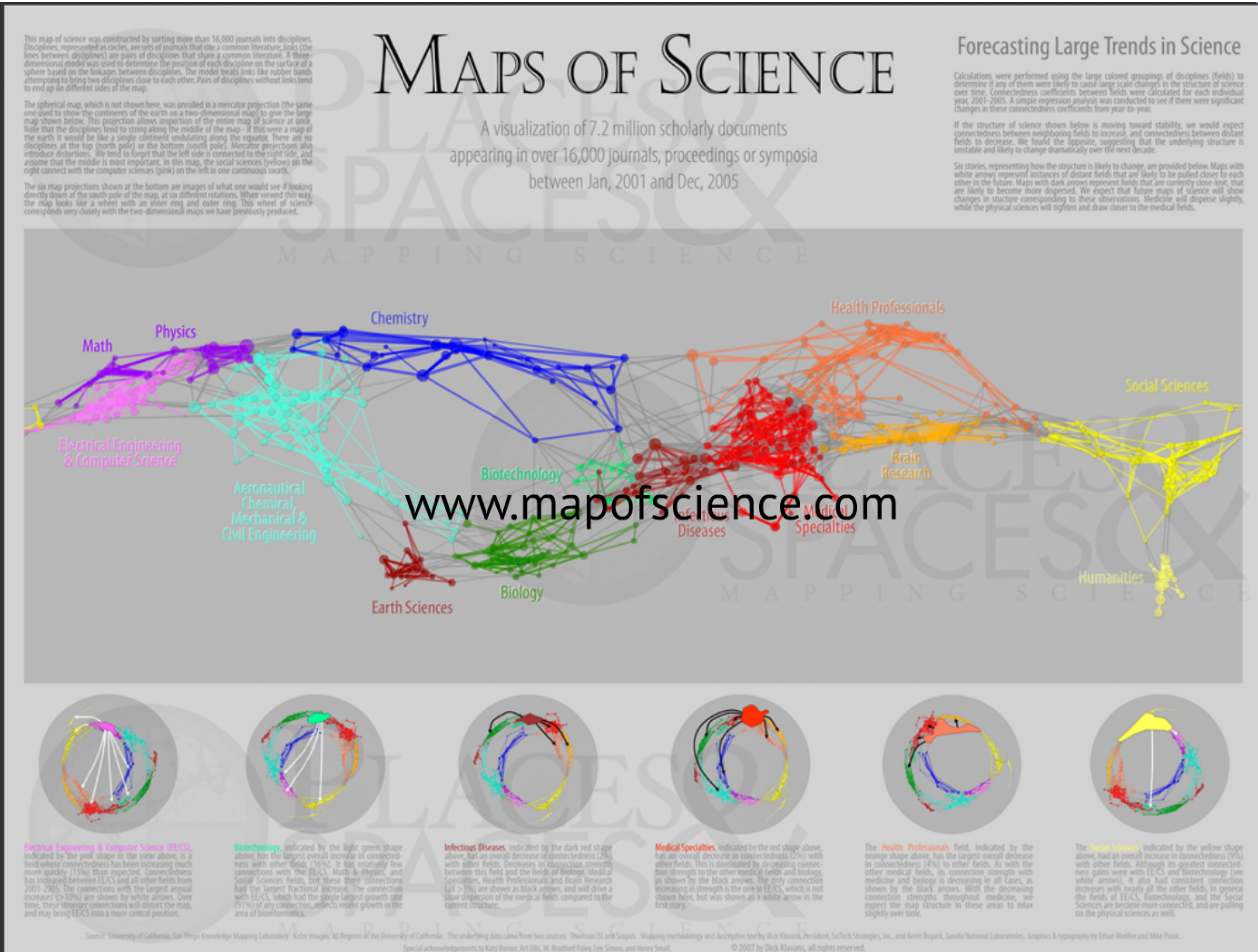

Macro
Zasoby nauki światowej, w skali kraju
wszystkie dziedziny
> 10 tys. rekordów
Skale analizy
Meso
Uczelnie, Instytuty, centra badawcze,
laboratoria, dziedziny/dyscypliny
naukowe
< 10 tys rekordów
Micro
Dorobek konkretnego
naukowca,
ścieżki kariery
1- 1 tys. rekordów





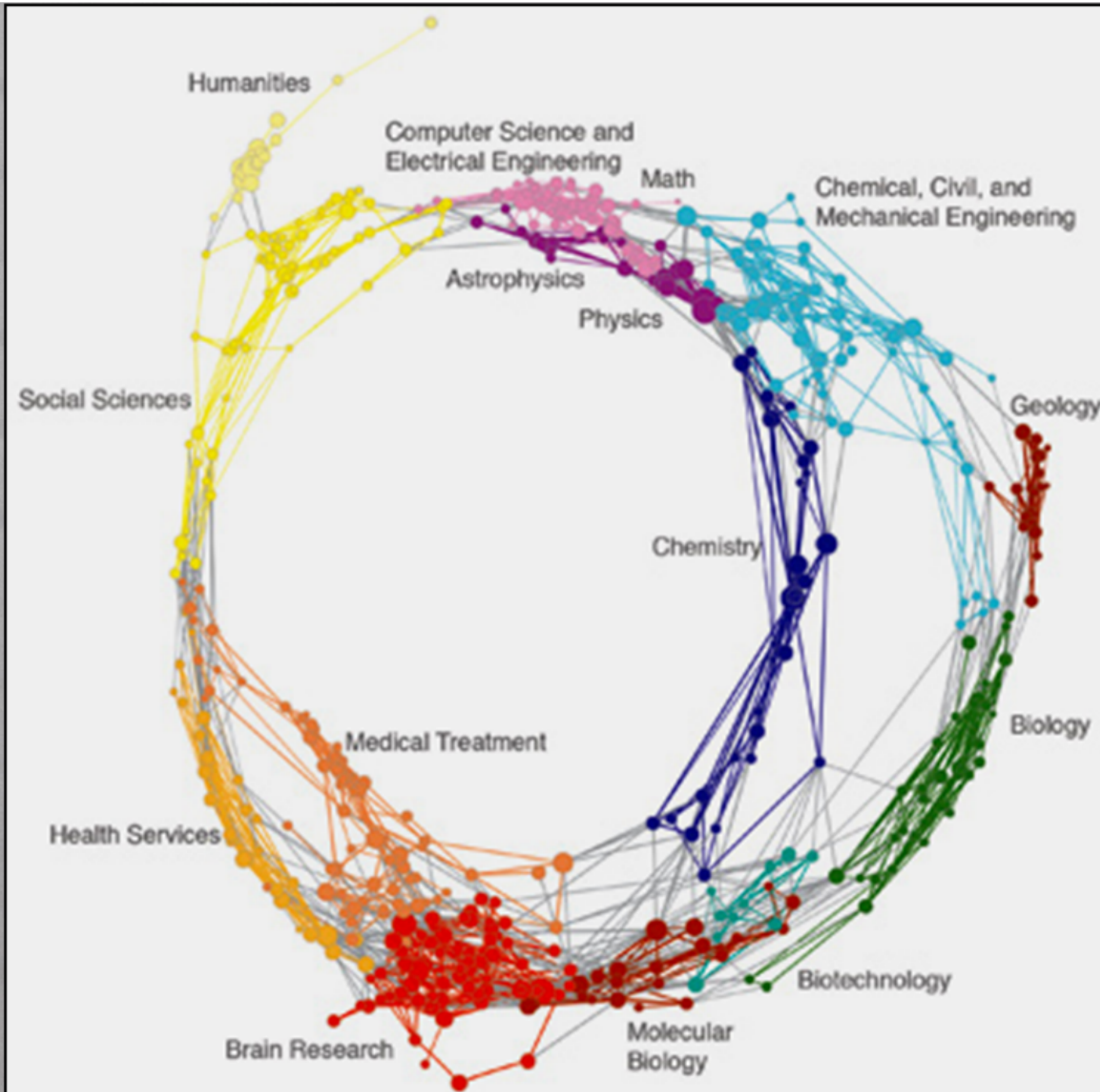
VII.4
Finding Research Literature on Autism, by Rex Robison





III.9
Maps of Science: Forecasting Large Trends in Science, by Richard Klavans and Kevin W. Boyack

PLACES & SPACES


Humanities
Computer Science and
Electrical Engineering
Math
Chemical, Civil, and
Mechanical Engineering
Astrophysics
Physics
Social Sciences
Geology
Chemistry
Biology
Medical Treatment
Health Services
Biotechnology
Molecular
Biology
Brain Research

U.S. Job Market: Where are the Academic Jobs?

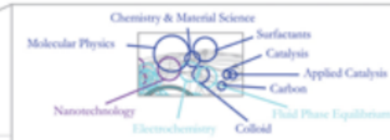
Labor Statistics

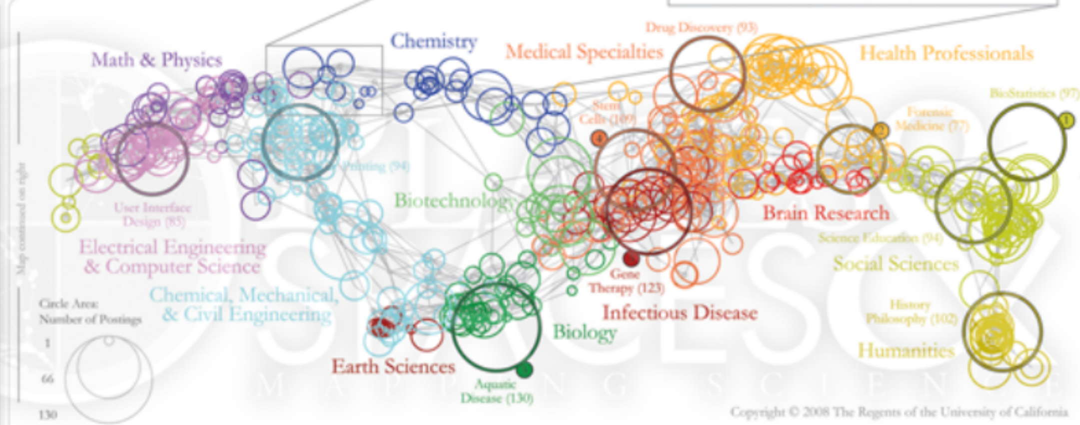
From the start of the recession in December 2007 through the end of 2009, more than 8 million jobs were lost in the United States. In October 2009, the U.S. unemployment rate peaked at 10.1 percent (after adjustment for seasonal variations). In April 2010, unemployment was still at 9.9 percent. In May 2010, about 6.8 million individuals, or 46 percent of those unemployed, had been unemployed for at least 27 weeks. Each month, 100,000 people enter the U.S. labor market—including high school and college graduates. They join 15 million Americans looking for work.

Unemployment rates are calculated and adjusted by the Bureau of Labor Statistics within the U.S. Department of Labor and reported in their monthly Economic News Release on the Employment Situation. Historical employment data, including unemployment rates with and without seasonal adjustment and divided by individual characteristics and employment sectors, are also available from the Bureau of Labor Statistics.

General Trends

The charts to the left show annual national economic indicators. These indicators serve as background data; they flow beneath and around more specific analyses of the job market. Business cycle data come from the National Bureau of Economic Research. Historical debt data come from the U.S. Department of Treasury. Unemployment rates come from the Bureau of Labor Statistics. GDP data come from the Bureau of Economic Analysis. Stock Price Index data come from the research of Dr. Robert Shiller at Yale University Department of Economics. Individual conversion factors (compiled from Bureau of Labor Statistics Consumer Price Indices by the Oregon State University Political Science Department) were applied where appropriate.





Sample Jobs

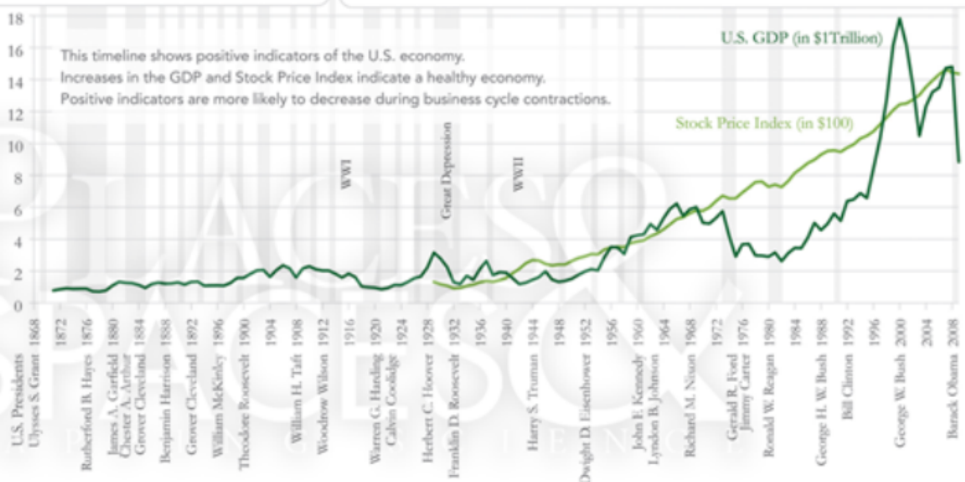
1. Bioinformatics Programming Support NIH NHGR (BioStatistics; Bethesda, MD)
2. Boston Site Lead Musculoskeletal Diseases (Forensic Medicine; Boston, MA)
3. Associate Scientist II Mouse NeuroGenomics (Gene Therapy; San Diego, CA)
4. Scientist Early Stage Cell Culture (Stem Cells; San Francisco, CA)
5. Post doctoral Training in Mammalian Genetics (Aquatic Disease; Bar Harbor, ME)

Geospatial Map

Using U.S. city and state information, circles are place over the location of the job postings and are sized in relation to the number of postings listed for that location. The top-10 cities with the highest number of postings are labeled, and the number of postings is given in parentheses.

Where are the Academic Jobs?

Over 3,500 jobs posted between July 2008 and February 2009 on Nature Jobs were collected and analyzed. The two maps above show the 1,037 job postings located in the U.S. and represent a directed study of the job market that sits on top of larger trends over time.



Topic Map

How many and what jobs are available in which scientific area? The UCSD Map of Science used here was created by analyzing 7.2 million papers published in over 16,000 separate journals, proceedings, and series from Thomson Scientific and Scopus over the five year period from 2001 to 2005.

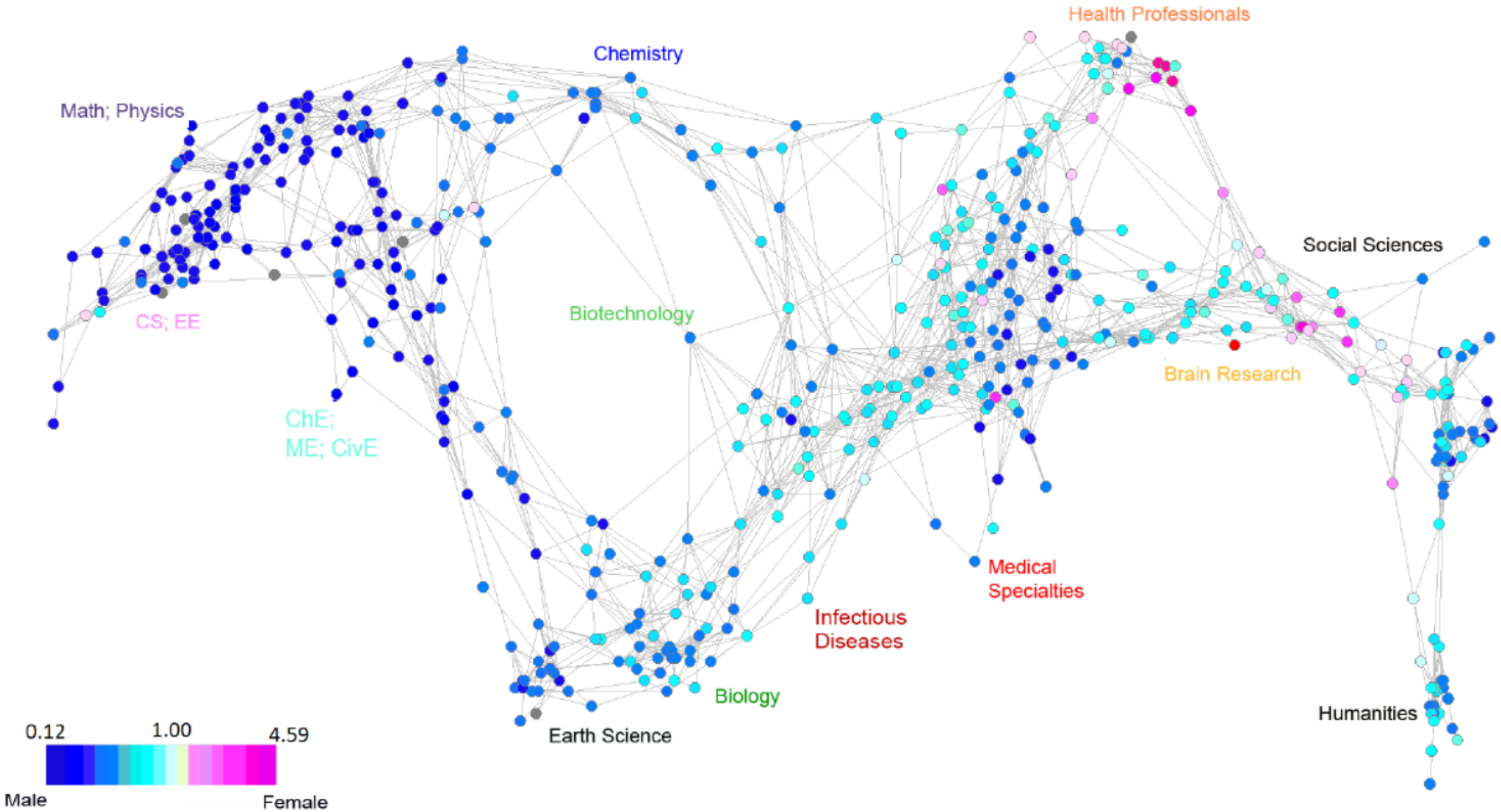
Using a hierarchical, multi-step clustering procedure, journals were grouped into 554 clusters based on common word usage and shared references (bibliographic coupling). In the map, each cluster is represented by a node, and links denote strong bibliographic coupling relations. The 554 clusters are further grouped into 13 color coded scientific disciplines.

The 1,037 jobs were overlaid based on word matches in their description and keywords associated with each of the 554 nodes. Like in the geospatial map, circle area sizes correspond to the number of jobs posted.

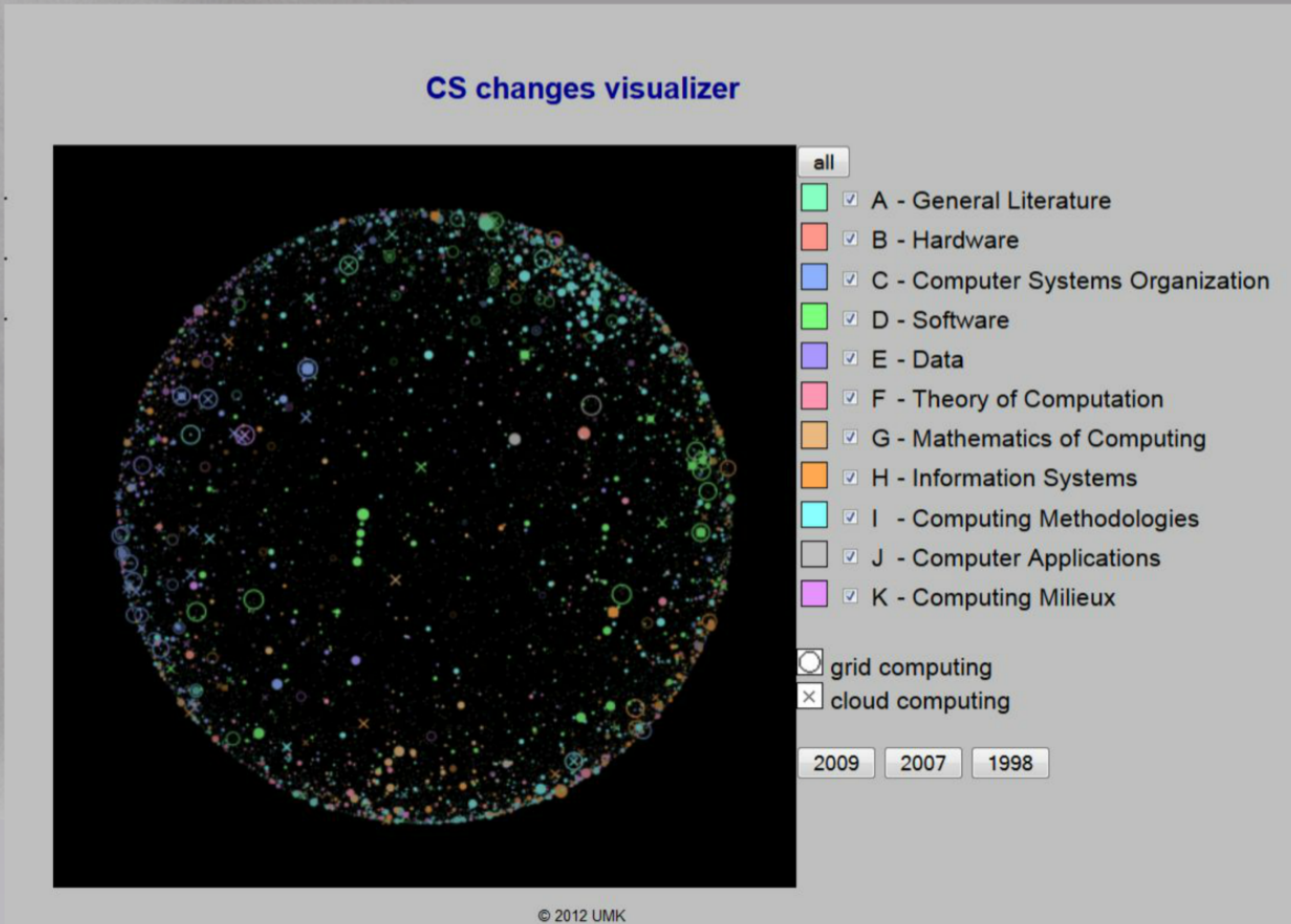
VI.10

U.S. Job Market: Where are the Academic Jobs?, by Angela M. Zoss and Katy Börner

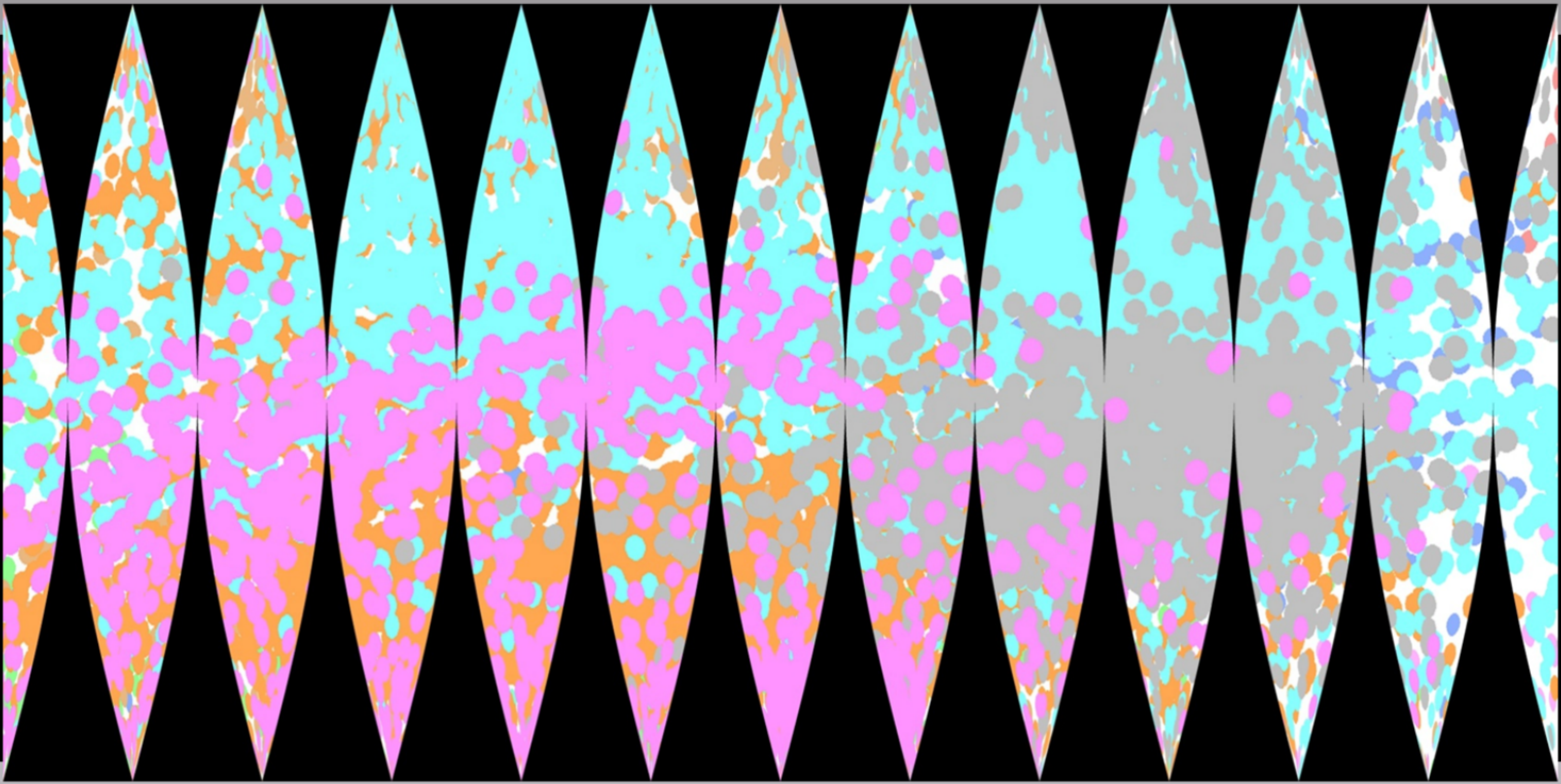
F/M PRODUCTIVITY BY DISCIPLINE



Wizualizacja rozwoju nauk komputerowych



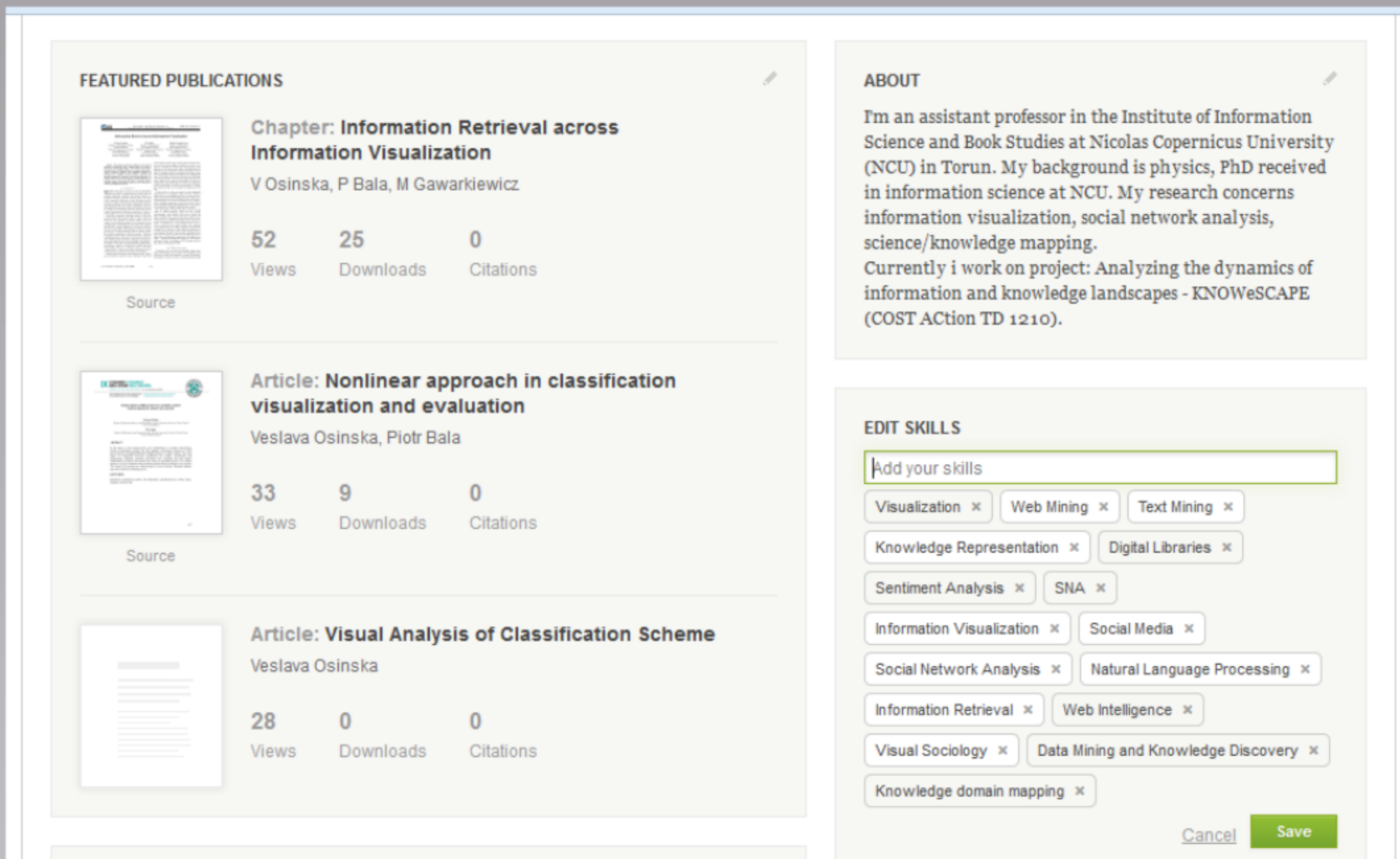
http://www-users.mat.umk.pl/~garfi/vis2009v3



Keywords

Ograniczenia

- Niewystarczająca precyzja
- Niewygoda w nawigacji



Zadania map nauki

- ujawnienie społecznej struktury dyscypliny/nauki
- wspomaganie IR
- Automatyczna klasyfikacja/klasteryzacja danych
- Badanie rozwoju dziedzin nauki i ew. prognozowanie
- Określenie polityki finansowania

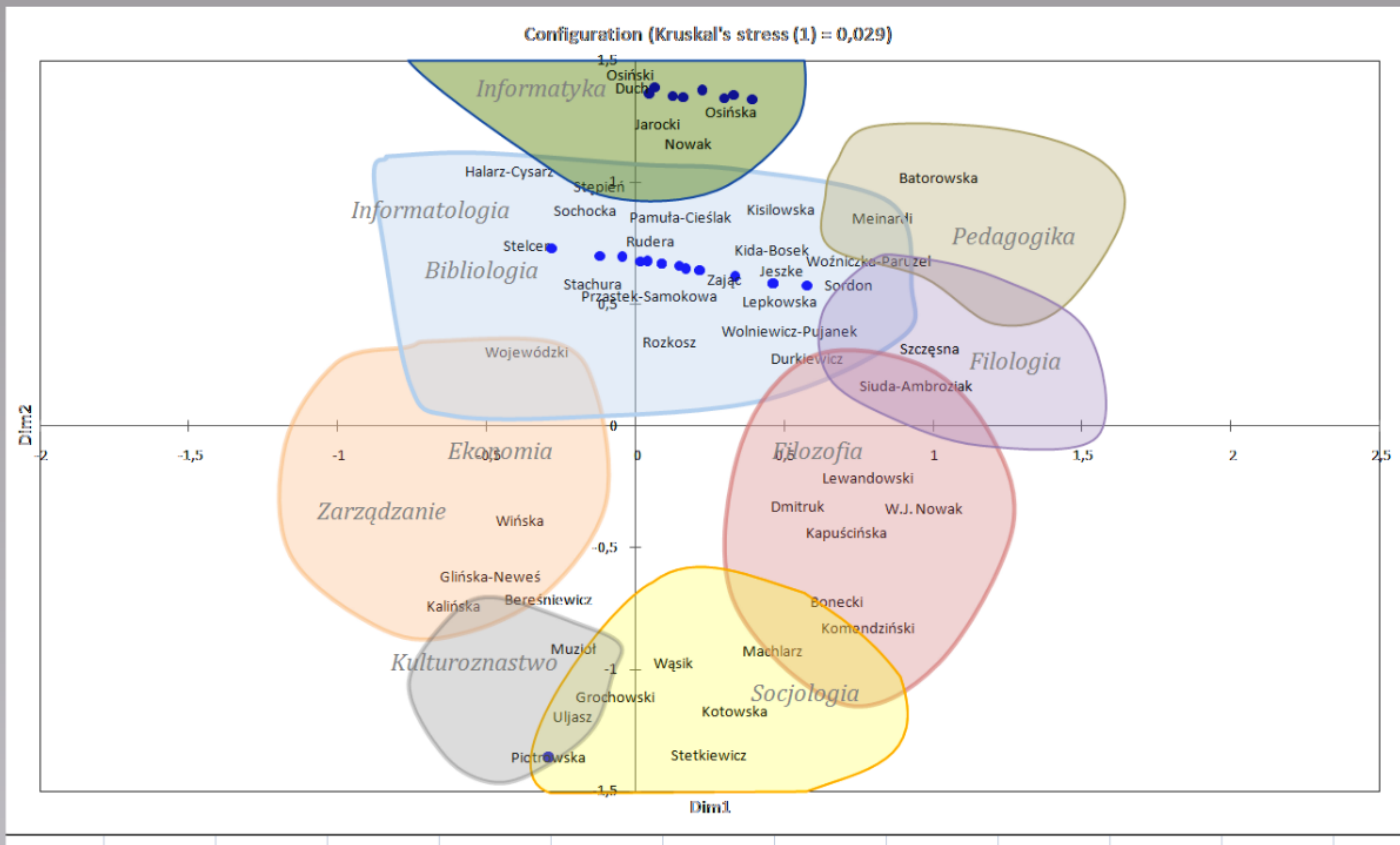
Adresaci

- *Science Maps for Science Policy Makers*
- *Science Maps for Economic Decision Makers*
- *Visualization techniques for policy decisions*
- *Data representation for visual analytics*
- *Public policies focuses on international collaboration*
- *Science modelling dynamics for science of science*

Micro aspekt

- Naukowcy jako menadżerowie i planiści własnej kariery.
- Walka o widoczność z wykorzystaniem wyników analiz
- Współpraca międzynarodowa
- Współpraca interdyscyplinarna

Homo Communicativus



Social Network Analysis (SNA)

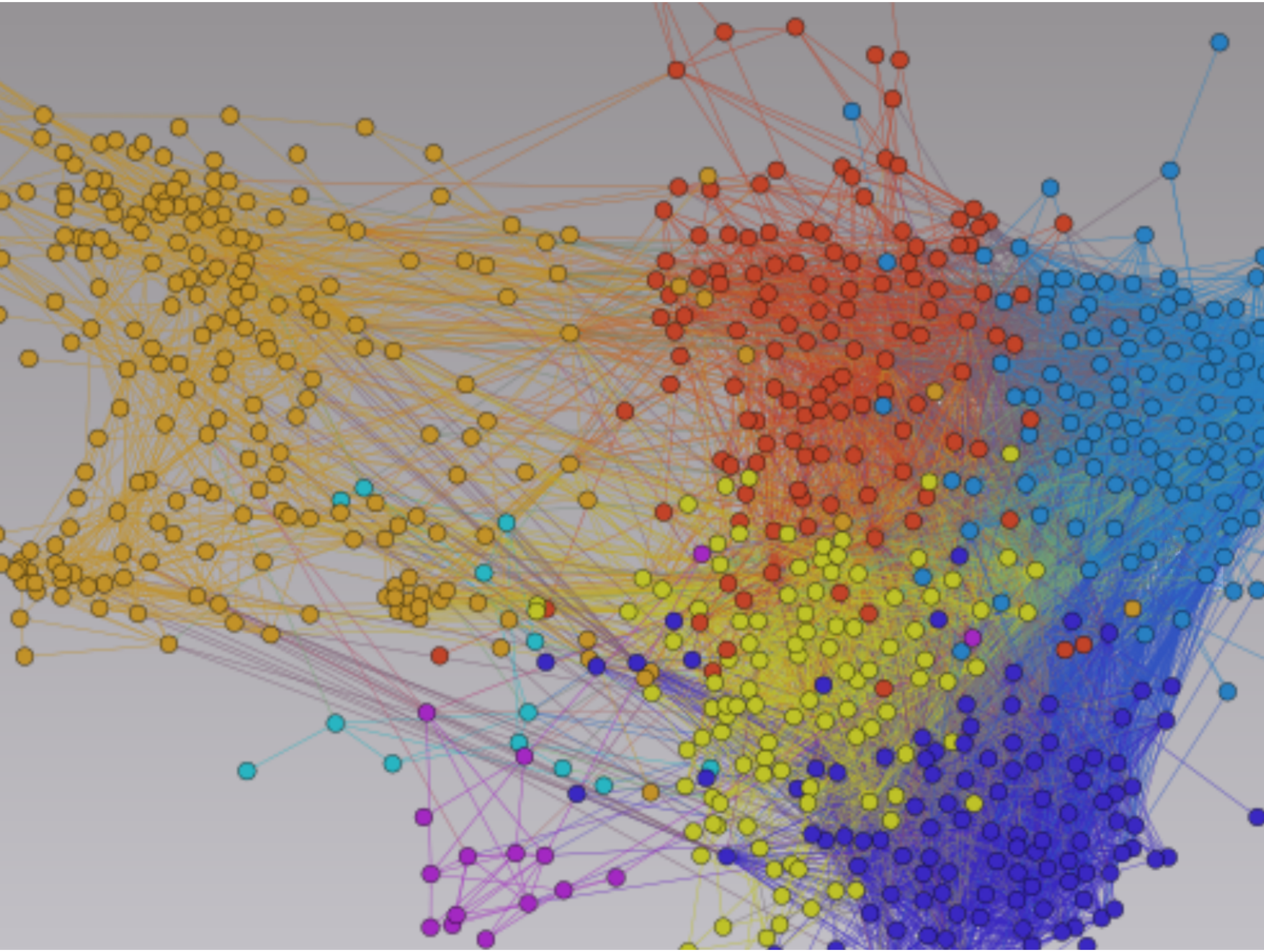
Zespół metod do badania struktur tworzonych przez ludzi w różnych społecznościach, organizacjach.

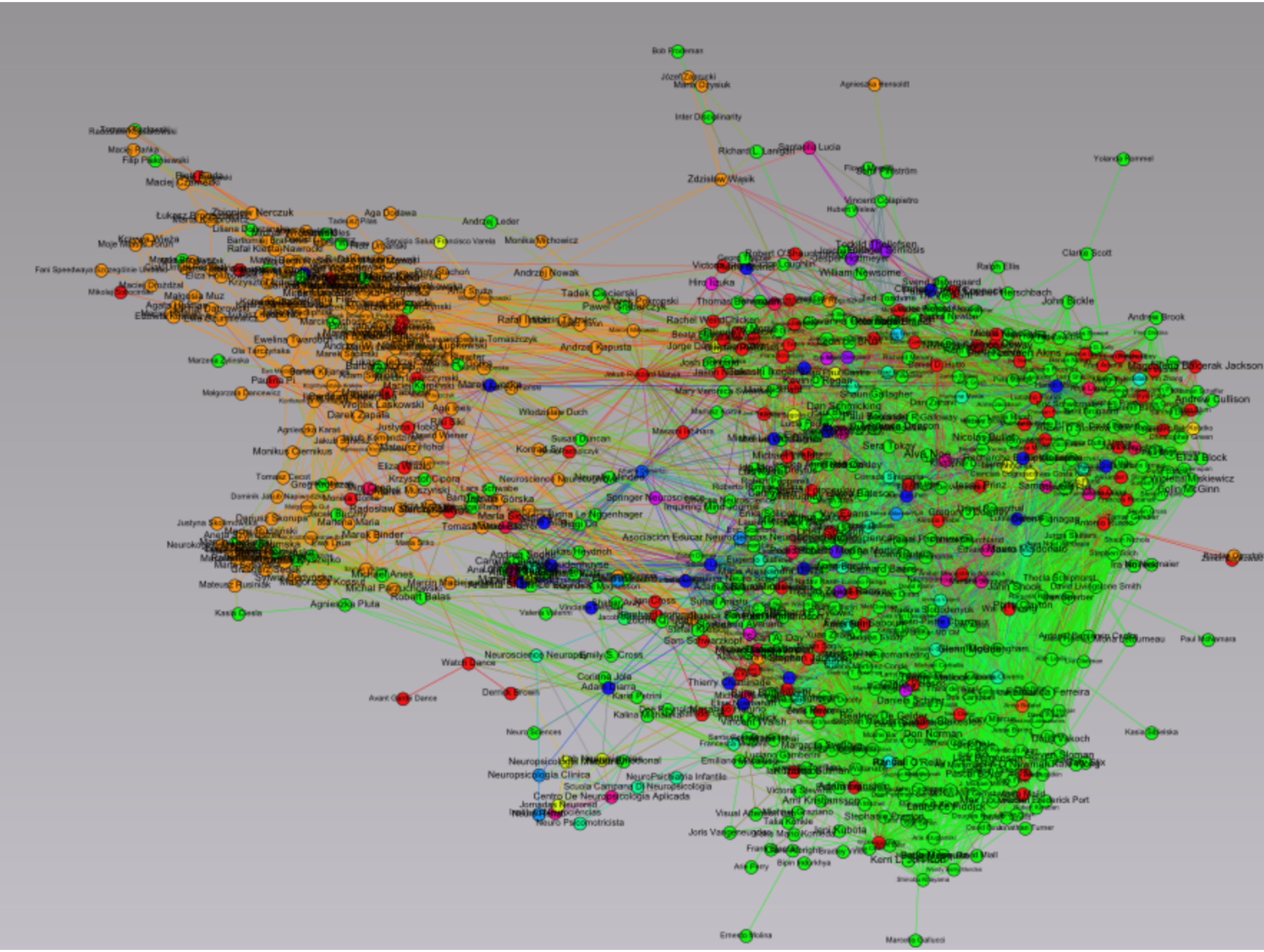
Teoria grafów, nauki o sieciach

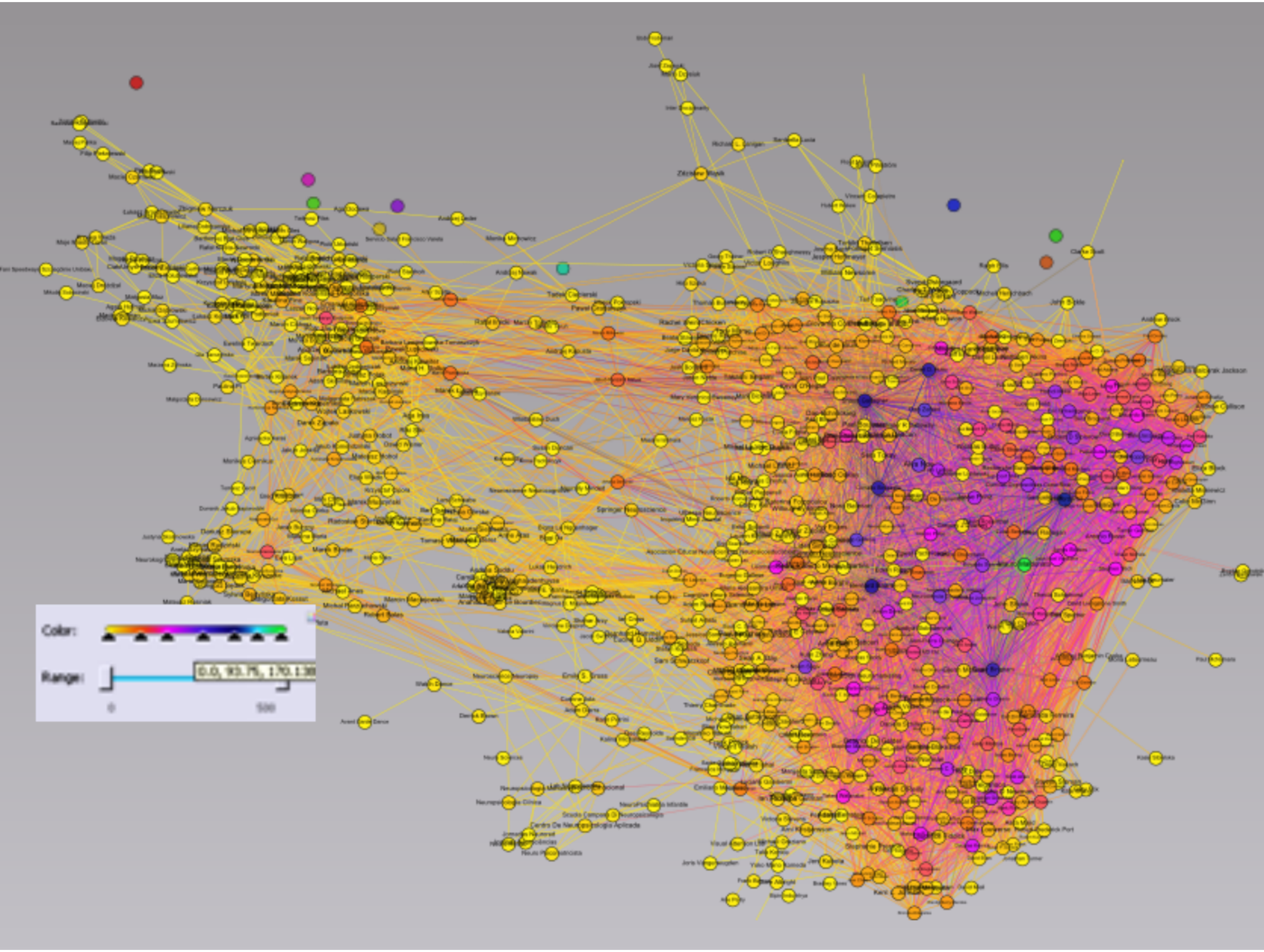
Zastosowania:

- Zarządzanie: analiza i poprawa kanałów komunikacji wewnątrz organizacji
- Policja: badanie struktur siatek przestępczych i terrorystycznych
- Internet: modelowanie sieci znajomych na portalach społecznosciowych
- Telekomunikacja: badanie przepustowości sieci

Nauki o sieciach nauką XXI wieku (masowość danych, popularność SNA w naukach społecznych)




Zdzisław Wąsik
Richard L. Langan
Santa Lucia
Clarke Scott
Ralph Ellis
John Bickle
Andrew Brook
Andrew Cullison
William Newsome
Andrzej Leder
Monika Michowicz
Andrzej Nowak
Tadek Ciecierski
Andrzej Kapusta
Włodzisław Duch
Susan Duncan
Springer Neuroscience
Marek Binder
Robert Balas
Agnieszka Pluta
Malgosia Muz
Darek Zapała
Sera Tokay
Nicolas Bullot
Don Norman
Ami Klin
Emily S. Cross
Neuropsicologia Clínica
Neuro Psicomotricista
Centro De Neuropsicologia Aplicada
Neuropsichiatria Infantile
Adam Diarra
Derrick Brown
Watch Dance
Avant Garde Dance
Paul McNamara
Kasia Sobelska
Marcelo Galluci
Ernesto Molina


Color:
Range:
0
500

"Po pierwsze, pozwoliło to mi na rozpoznanie własnego miejsca w ***strukturze*** *pewnej budowanej przeze mnie* ***wspólnoty, społeczności****, a także* ***miejsce moje*** *i tej* ***wspólnoty*** *w szerszym kontekście sieci* ***więzi naukowych****.*
Po drugie, umożliwiło planowanie poszerzania swoich więzi w ***celach teoretycznych****,* ***projektowych****, ale również ze względu na poczucie* ***tożsamości*** *i* ***przynależności*** *do określonej* ***społeczności****."*

www.vivoweb.org

Wnioski

- Wizualizacja jako środek bibliometryczny
- Dwa profile w mapowaniu: struktura społeczna i struktura dziedzinowa
- VIVO -odpowiedzią na brak zcentralizowanej polskiej bazy danych naukowej i równowagi w widoczności naukowców z różnych dziedzin.

Dziękuję za uwagę

wieo@umk.pl