

How to Create an Overlay Map of Science Using the Web of Science

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Version 5.13.1 Categories in both Pajek⁴ and VOSviewer⁵.

These are expanded step-by-step instructions of how to create an overlay map of science from: Loet Leydesdorff, Stephen Carley, Ismael Rafols Source: February 9, 2012, INSNA Listserve post:

Global Maps of Science based on the new Web-of-Science Categories

<http://arxiv.org/ftp/arxiv/papers/1202/1202.1914.pdf>

In **January 2014**, Thomson Reuters launched **version 5.13.1** of the Science and Social Science Citation Index in the Web of Science (WoS). In 2012 the **222** ISI Subject Categories (SCs) for these two databases in version 4 of WoS were renamed and extended to 225 WoS Categories (WCs). Since we previously used the ISI SCs as the baseline for a global map in Pajek (Rafols et al., 2010) and brought this facility online (<http://www.leydesdorff.net/overlaytoolkit>), we recalibrated this map for the new WC categories using the Journal Citation Reports 2010. In addition to Pajek, the new base maps can also be made using VOSviewer (Van Eck & Waltman, 2010). “ Note: as of March 31, 2014 there are 251 WoS Subject Categories.

Part.1 Overview

The following instructions enable the user to create a custom map of science for an author, set of authors, institution or set of institutions using the Web of Science search results and then mapping the results on a standardized template in either Pajek or VOSviewer with aggregation labels of 4, 6 or 19 factors.

These instructions assume the following:

1. You have a PC with internet access
2. You have access to the Web of Science Database **version 5.13.1**.

Note: The overlay toolkit software does not run on a Mac. However, if you have

Parallels or other virtual machine software on the Mac it will work.

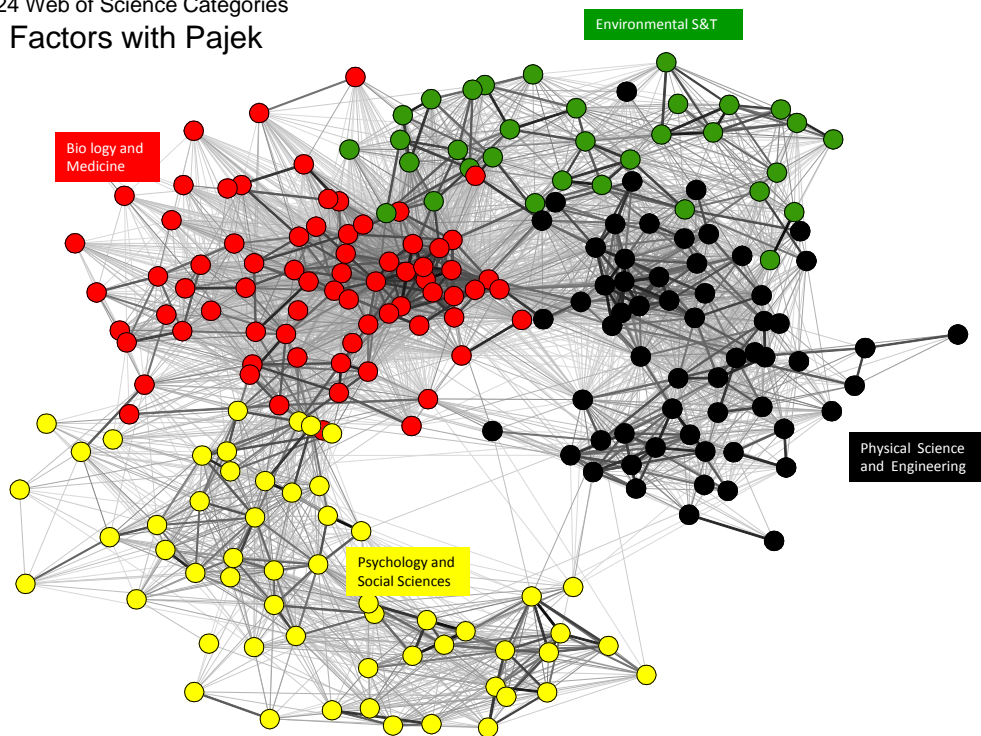
Here are the basemaps⁶ in 4, 6 or 19 factors in Pajek.

4 Pajek is freely available at <http://vlado.fmf.uni-lj.si/pub/networks/pajek/>

5 VOSviewer is freely available at <http://www.VOSviewer.com/>

6 Base maps available at <http://www.leydesdorff.net/overlaytoolkit/basemaps.ppt>

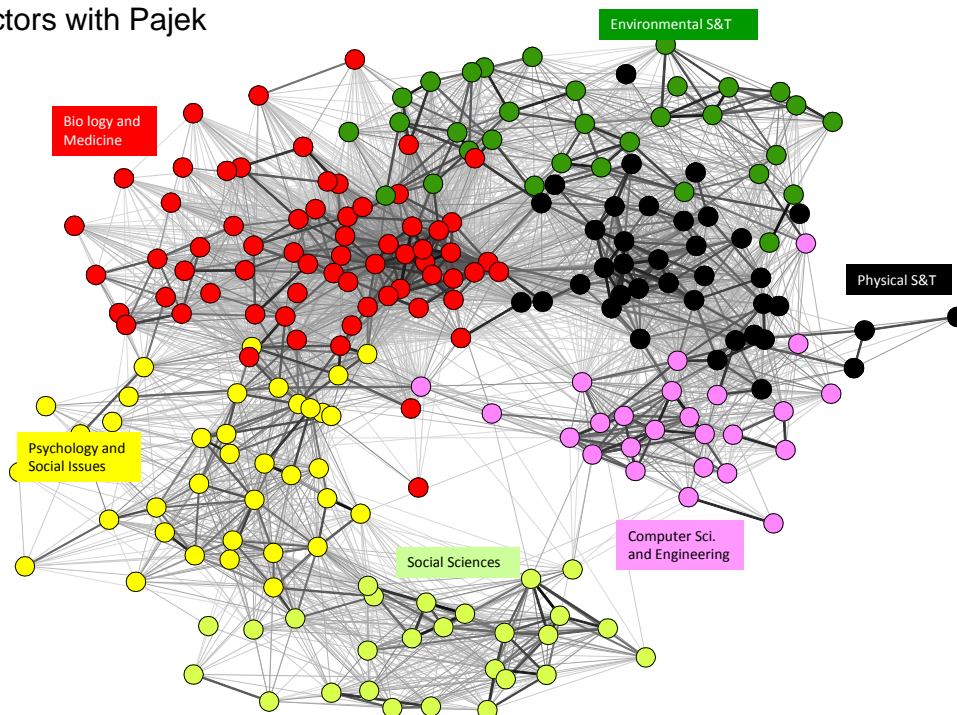
Global Map of Science, 2010 update
 224 Web of Science Categories
 4 Factors with Pajek



Method from Rafols, Porter and Leydesdorff (2009)



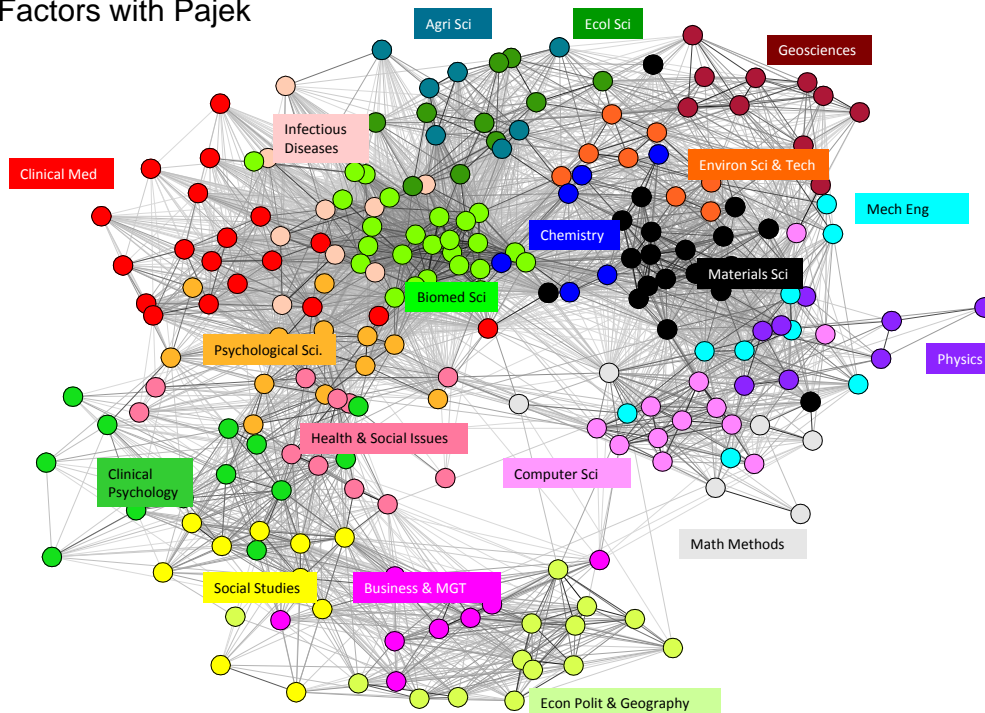
Global Map of Science, 2010 update
 224 Web of Science Categories
 6 Factors with Pajek



Method from Rafols, Porter and Leydesdorff (2009)



Global Map of Science, 2010 update
224 Web of Science Categories
19 Factors with Pajek

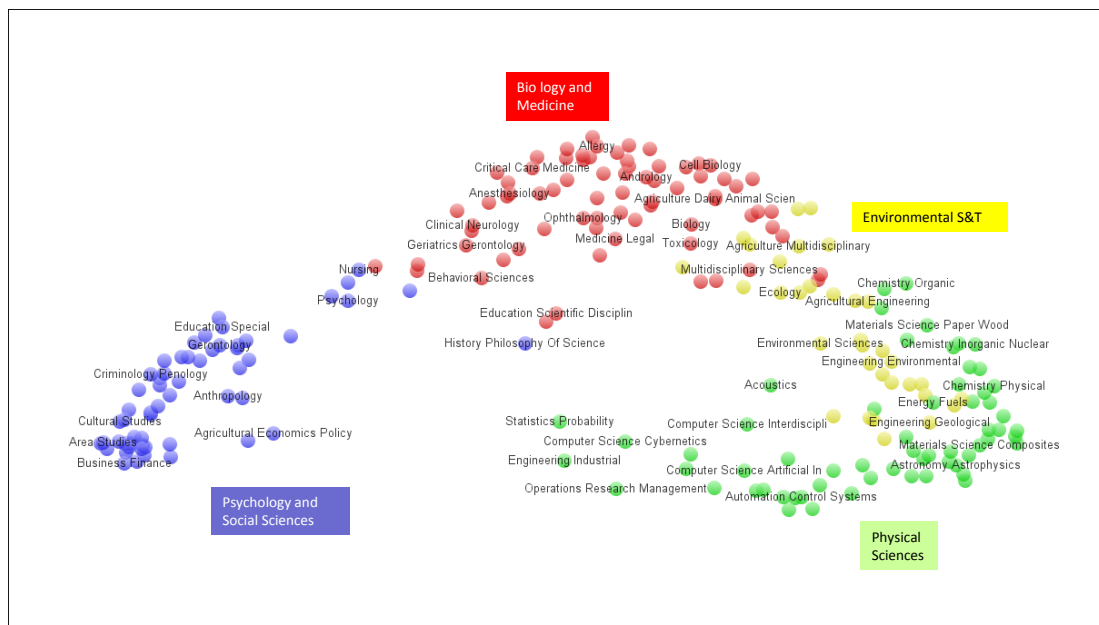


Method from Rafols, Porter and Leydesdorff (2009)



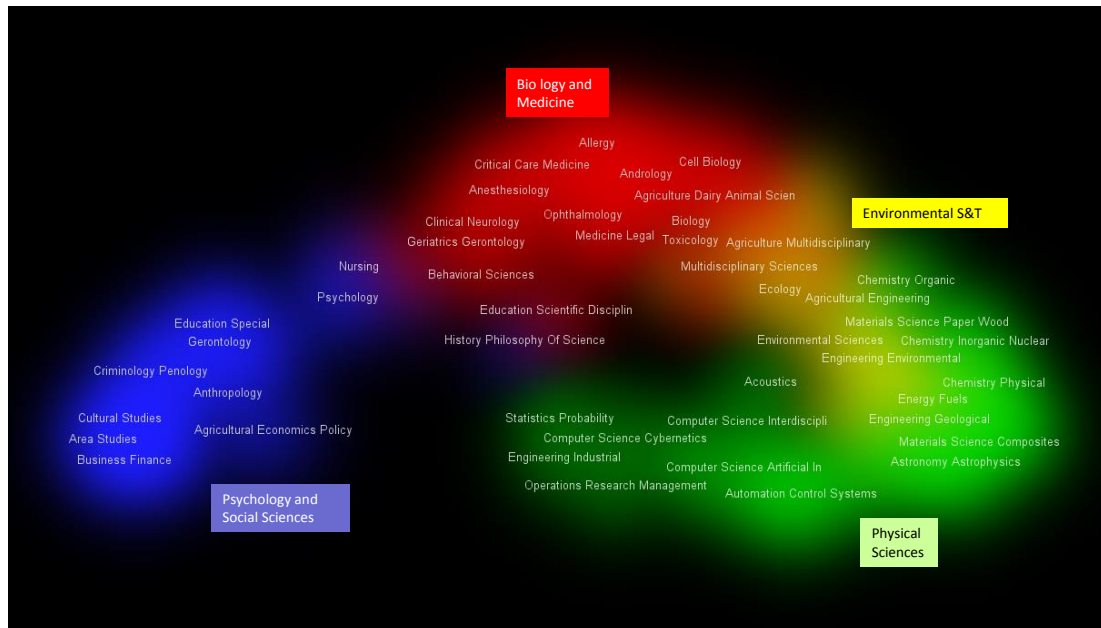
Here are the base maps⁷ in 4, or 6 VOSviewer:

Global Map of Science, 2010 update
224 Web of Science Categories
4 Factors with VOSviewer

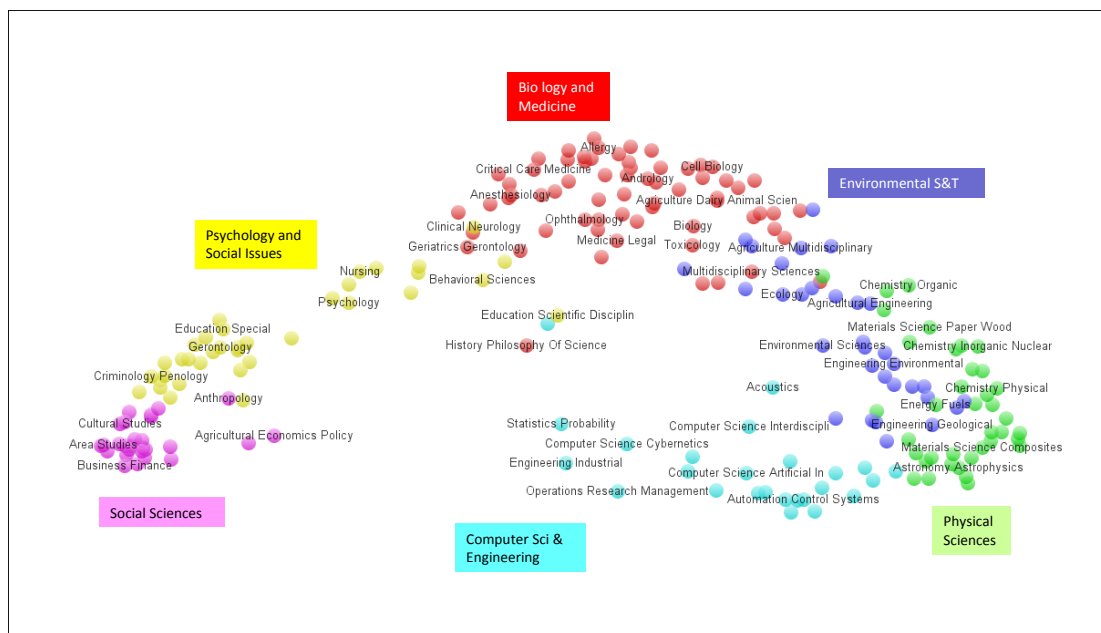


⁷ Base maps available at <http://www.leydesdorff.net/overlaytoolkit/basemaps.ppt>

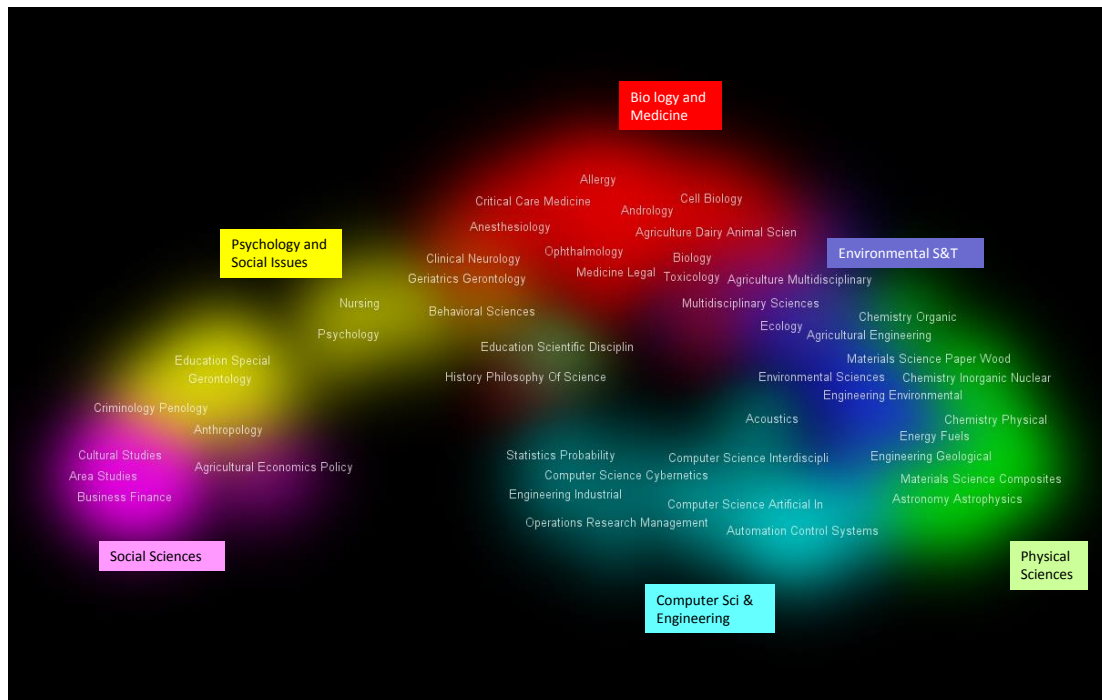
Global Map of Science, 2010 update
224 Web of Science Categories
4 Factors with VOSviewer



Global Map of Science, 2010 update
224 Web of Science Categories
6 Factors with VOSviewer



Global Map of Science, 2010 update
224 Web of Science Categories
6 Factors with VOSviewer



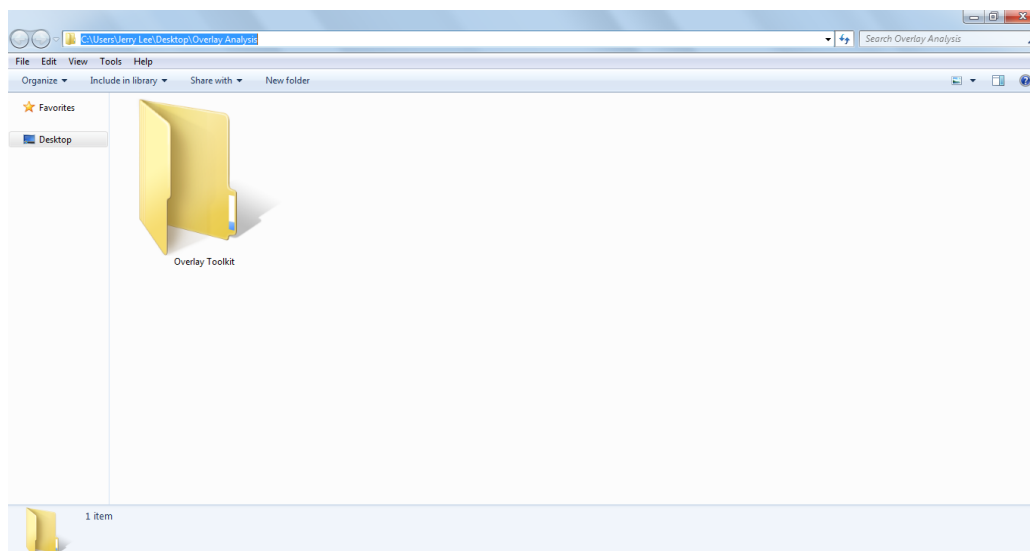
Part.2 Detail steps to create overlay map

Instructions are for a PC only⁸.

Step1. Create a folder

Create a folder, such as, Overlay Toolkit

Note: address <C:\Users\Jerry Lee\Desktop\Overlay Analysis>



Step2. Overlaytoolkit preparation

Download overlaytoolkit files from these links:

a. The Windows DOS executable file: *wc10.exe*

⁸ Note: the original instructions are at: <http://www.leydesdorff.net/overlaytoolkit/>

<http://www.leydesdorff.net/overlaytoolkit/wc10.exe>

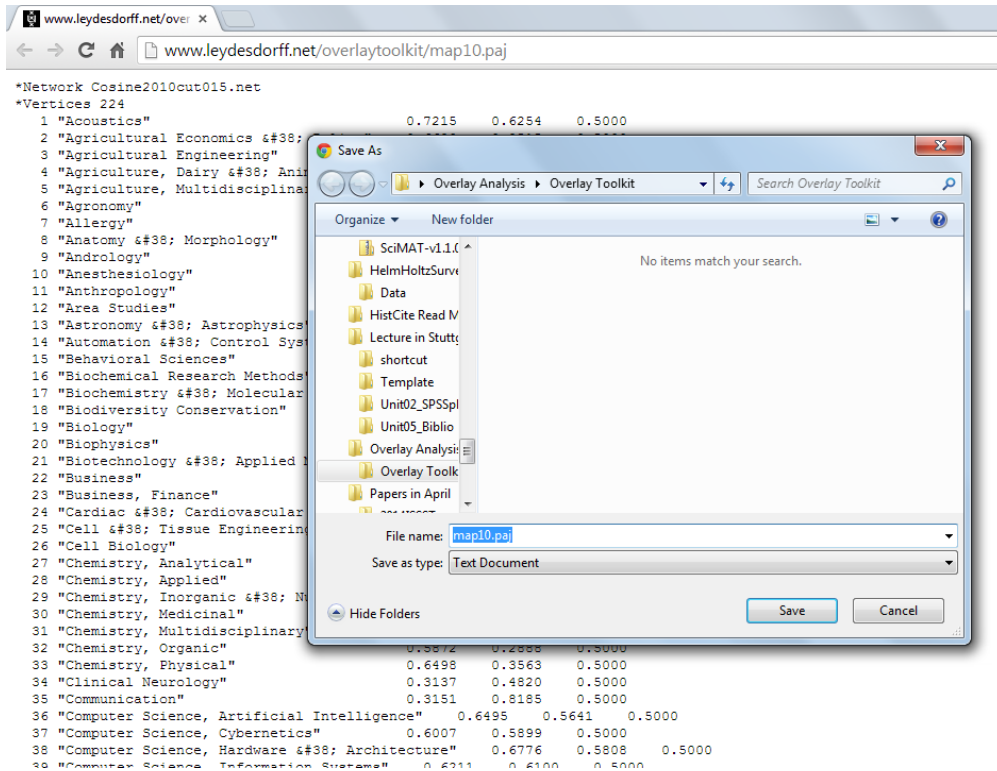
The wc10.exe file converts a Web of Science search results file, called "analyse.txt," into Pajek and VOSviewer files for mapping.

b. The Pajek base map file: map10.paj

<http://www.leydesdorff.net/overlaytoolkit/map10.paj>

Note: Make sure to save file as text with extension ".paj"

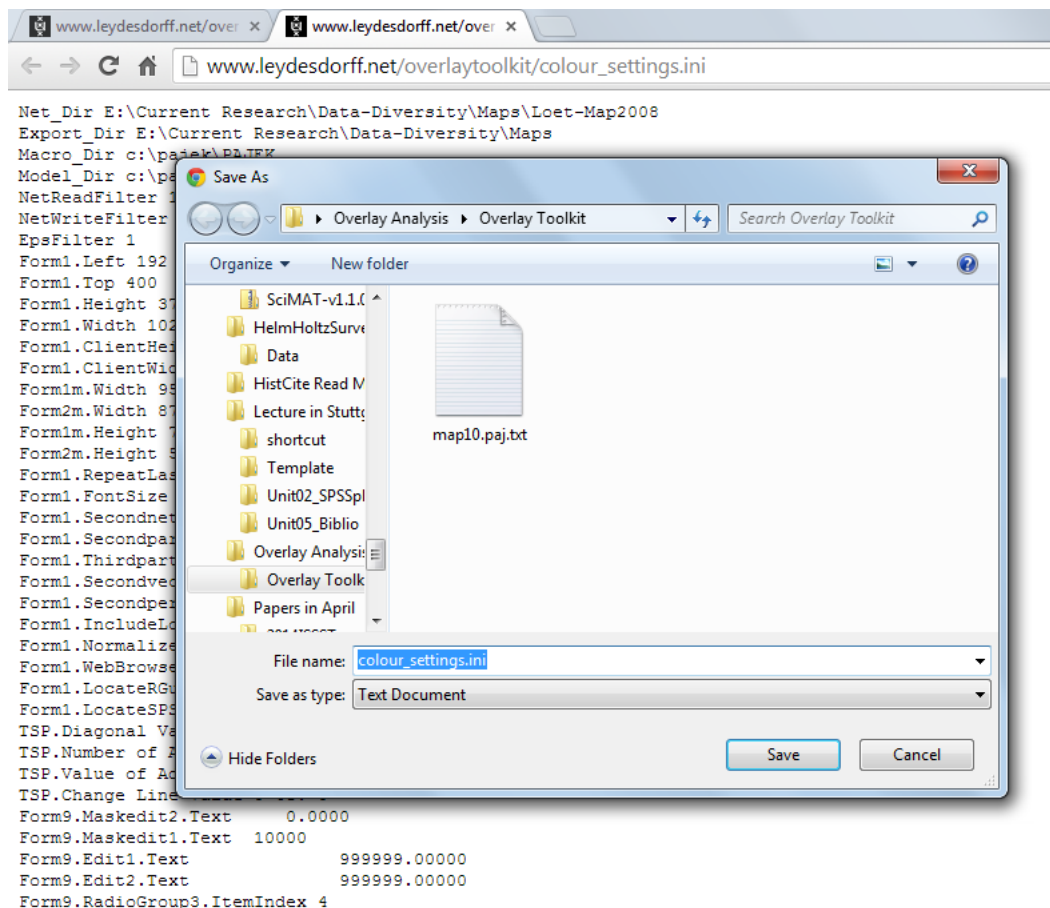
The map10.paj is a Pajek project file which serves as the base map.



c. The Pajek Color setting ini file:

http://www.leydesdorff.net/overlaytoolkit/colour_settings.ini

The Pajek Color settings file provides a standard color settings.



d. The basemap PowerPoint file:

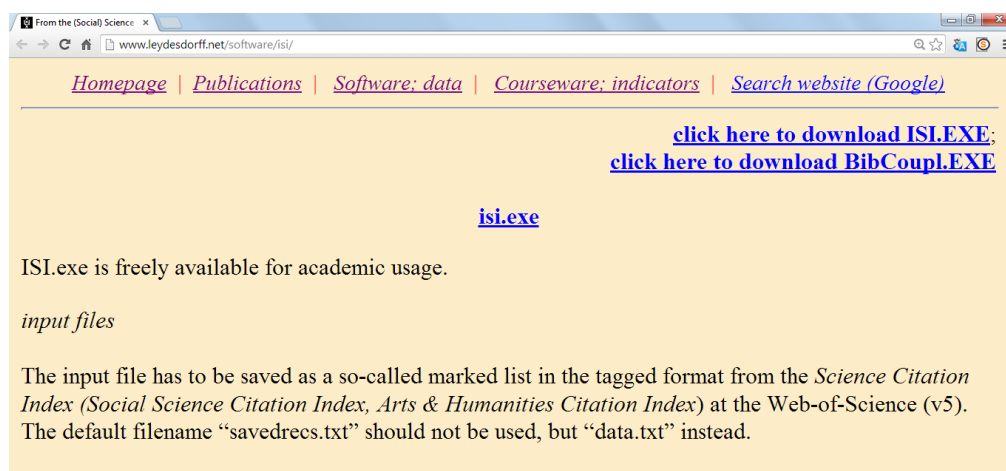
<http://www.leydesdorff.net/overlaytoolkit/basemaps.ppt>

This PowerPoint file contains 15 slides with the base maps and labels for the 4, 6, and 19 factors for Pajek and VOSviewer as well as sample maps.

e. The toolkit Windows DOS executable: isi.exe

<http://www.leydesdorff.net/software/isi>

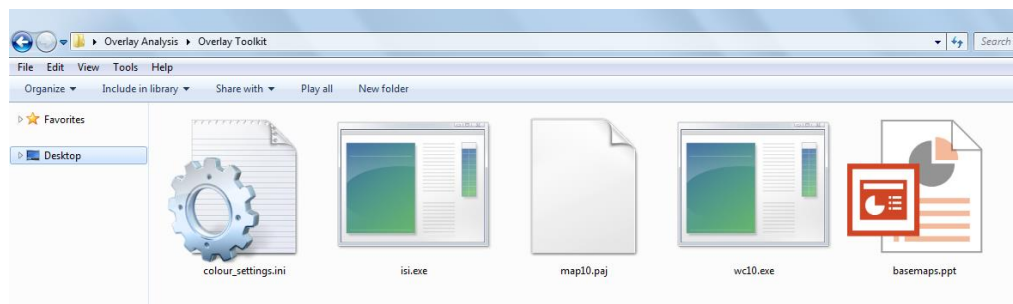
Note: This link takes you page to download the isi.exe file. Right click on the isi.exe to download and save.



The ISI.exe produces the wc10.vec file and other files with information on fields such as authors or journals that may be of interest.

Note: For each file, Click Save, navigate to your target folder, e.g., OverlayToolKit, Click Save.

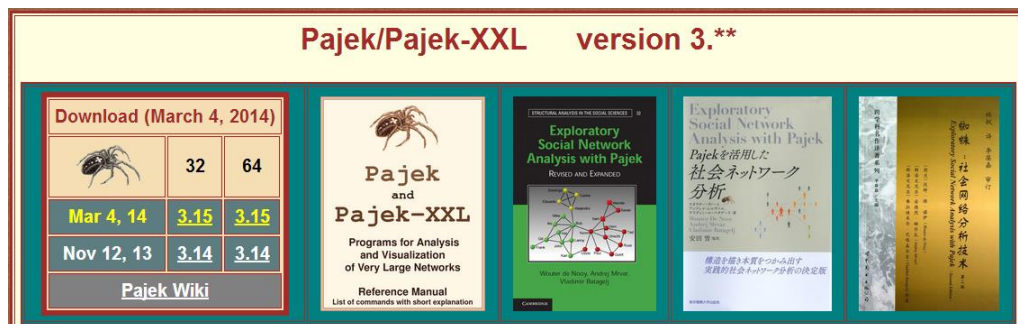
The following 5 files should then appear in your designated folder:



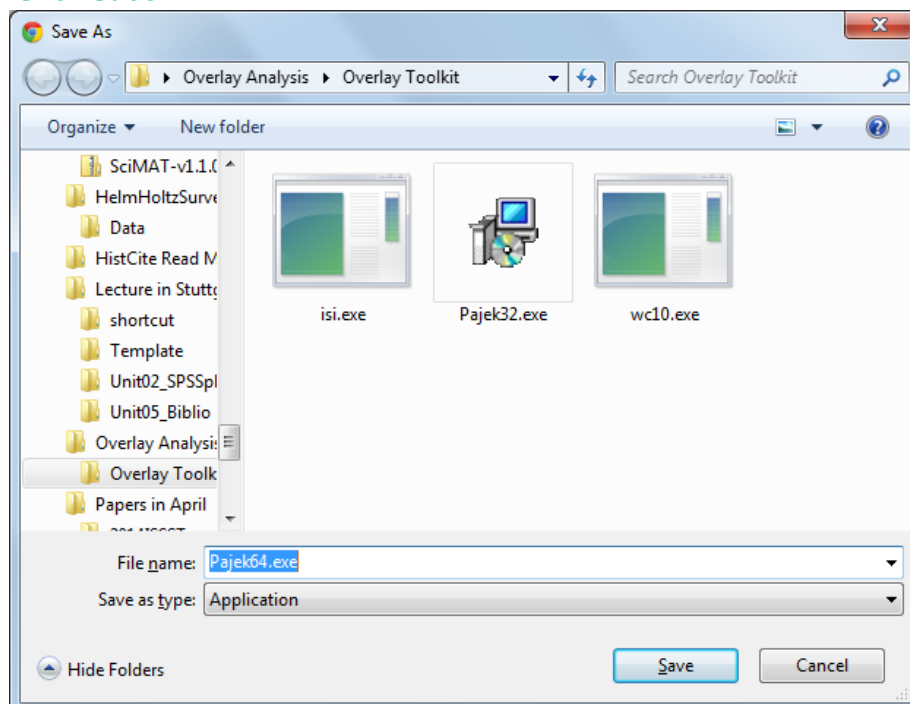
Step3. Download and install Pajek.

a. Choose the 32 or 64 bit version depending upon your computer.

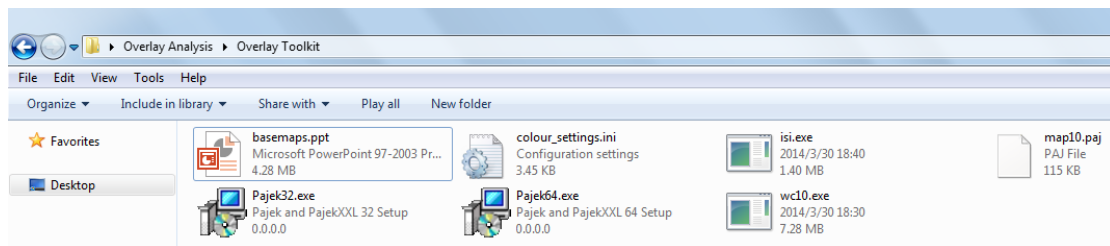
<http://mrvar.fdv.uni-lj.si/pajek/default.htm>



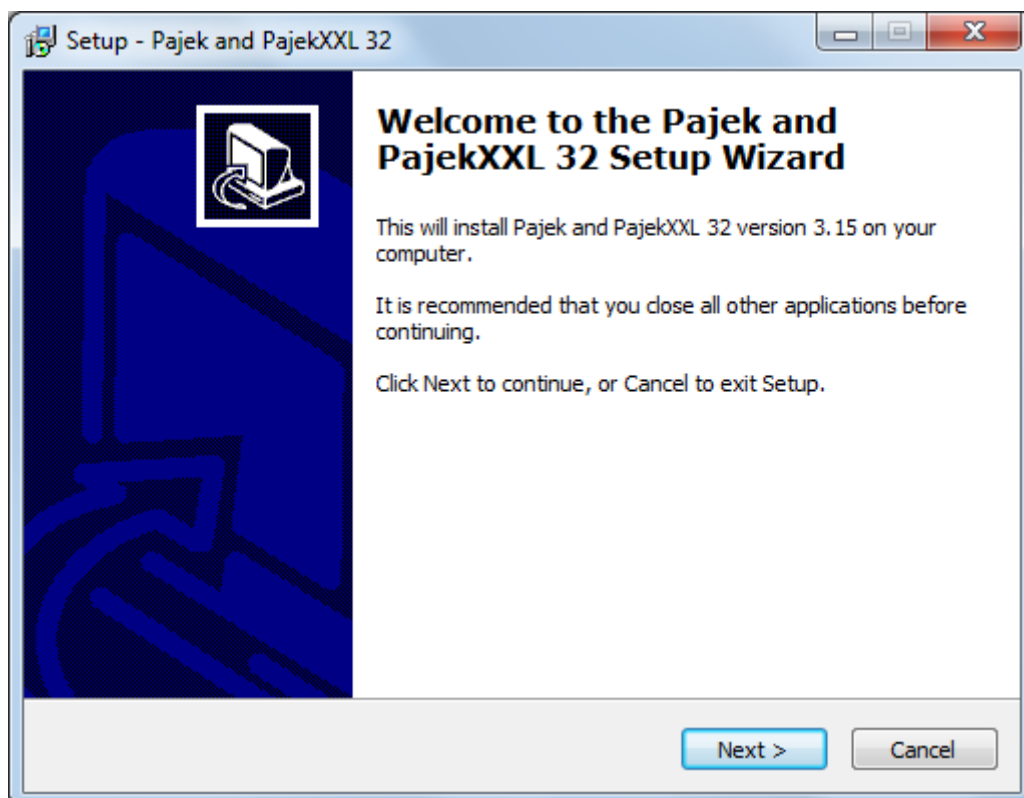
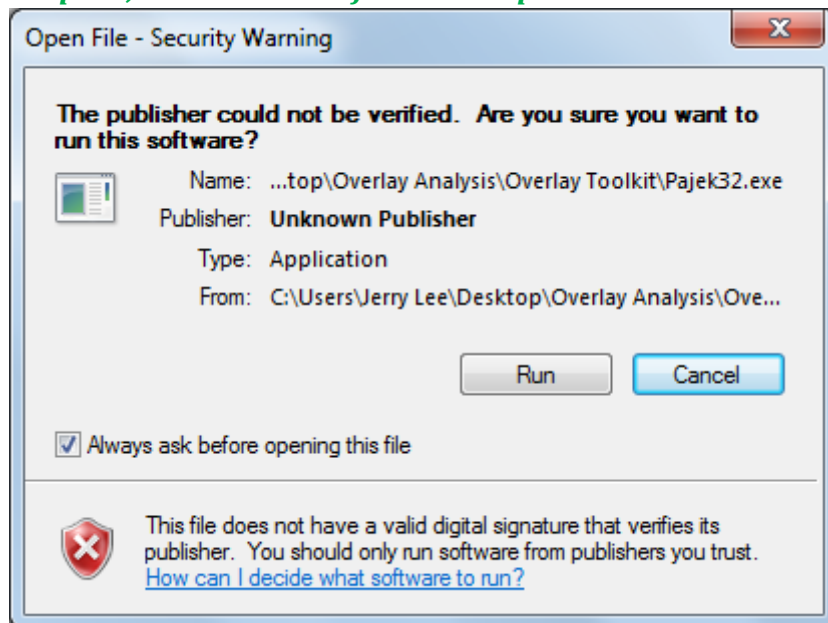
b. Click Save

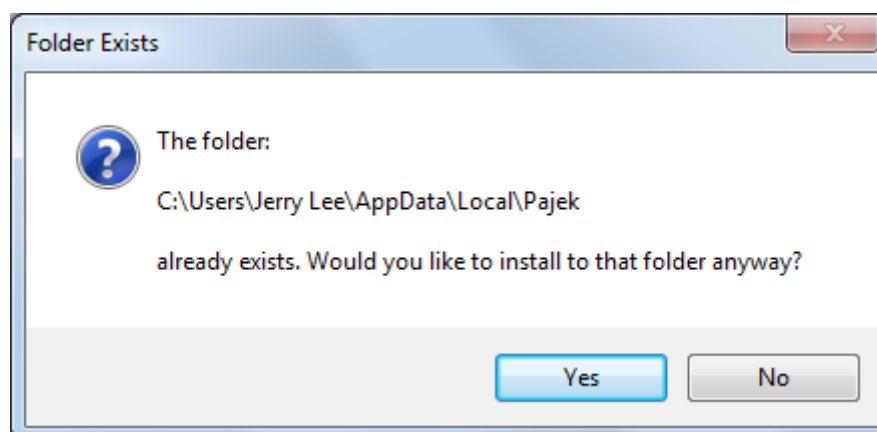
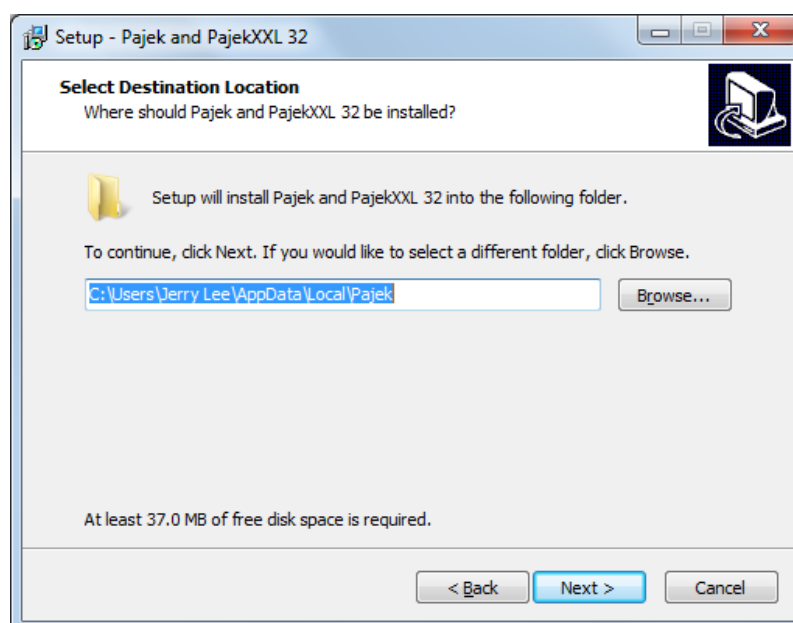
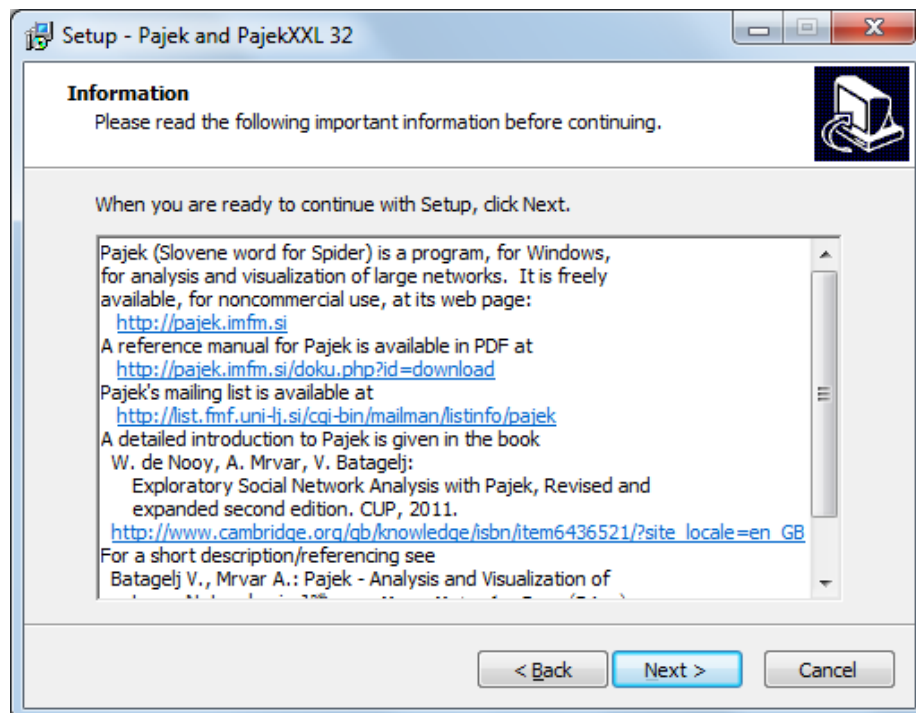


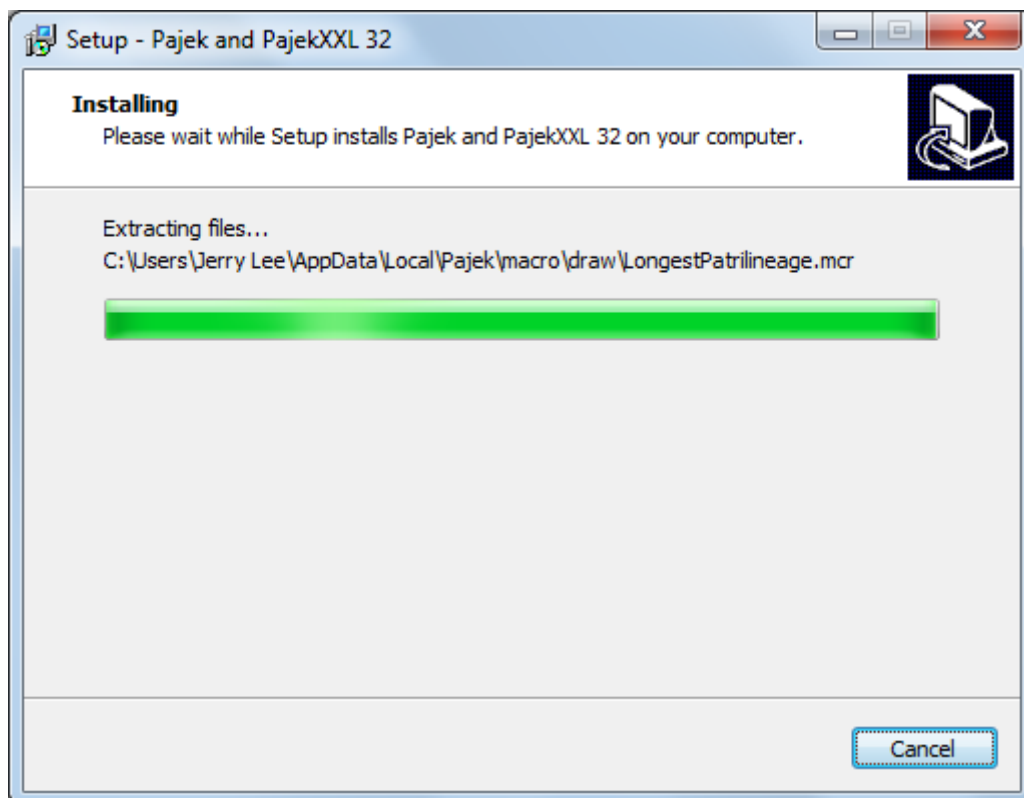
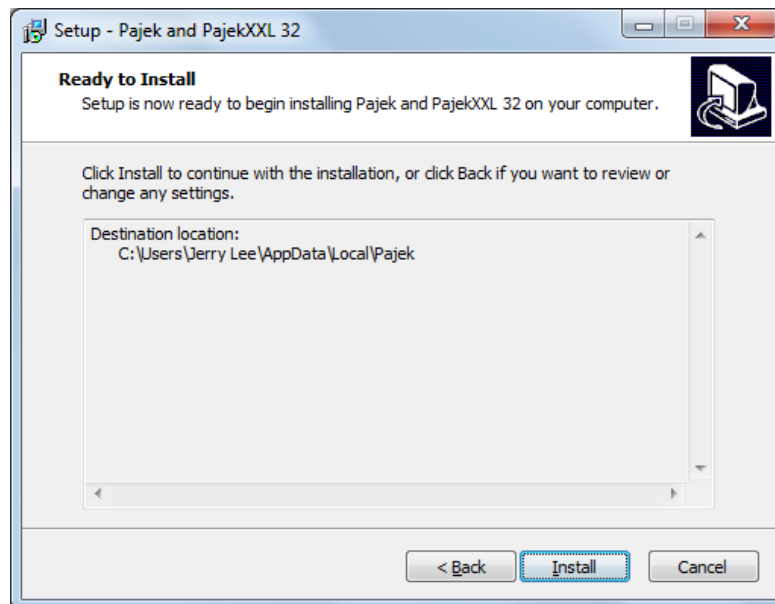
c. After the download is complete, Click "Open Folder. You should see this file in your folder.

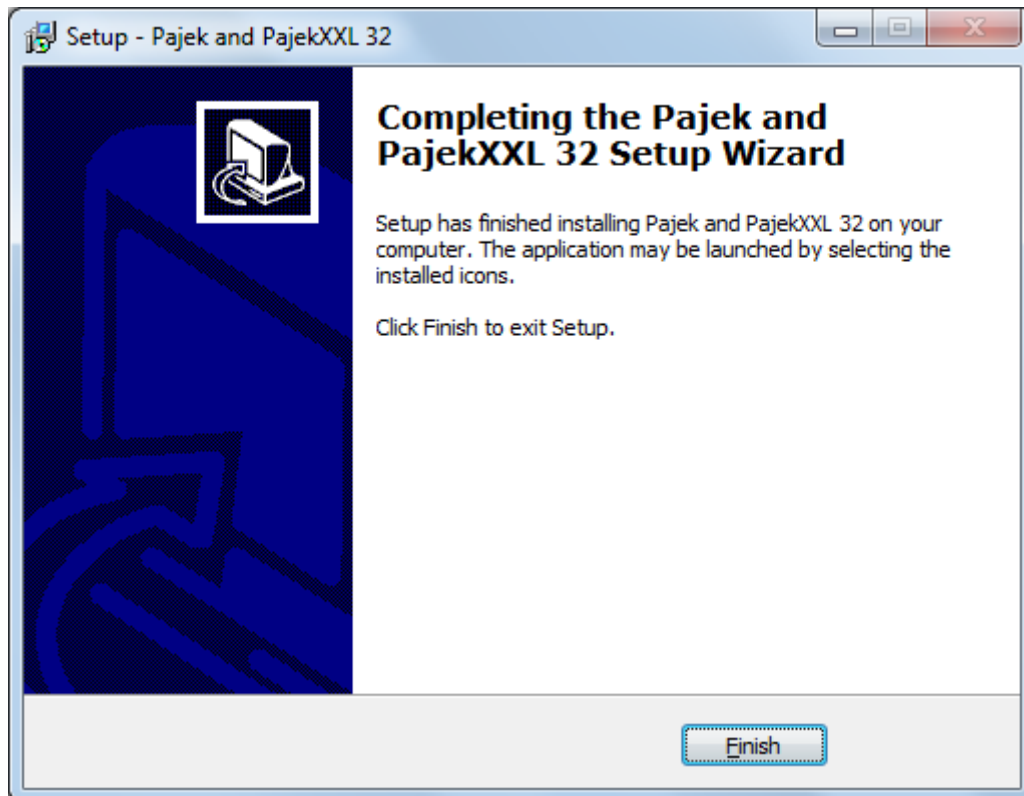


d. Double click in the Pajek installation file Pajek32. A Security Warning window opens, Click Run. And flow the step below..

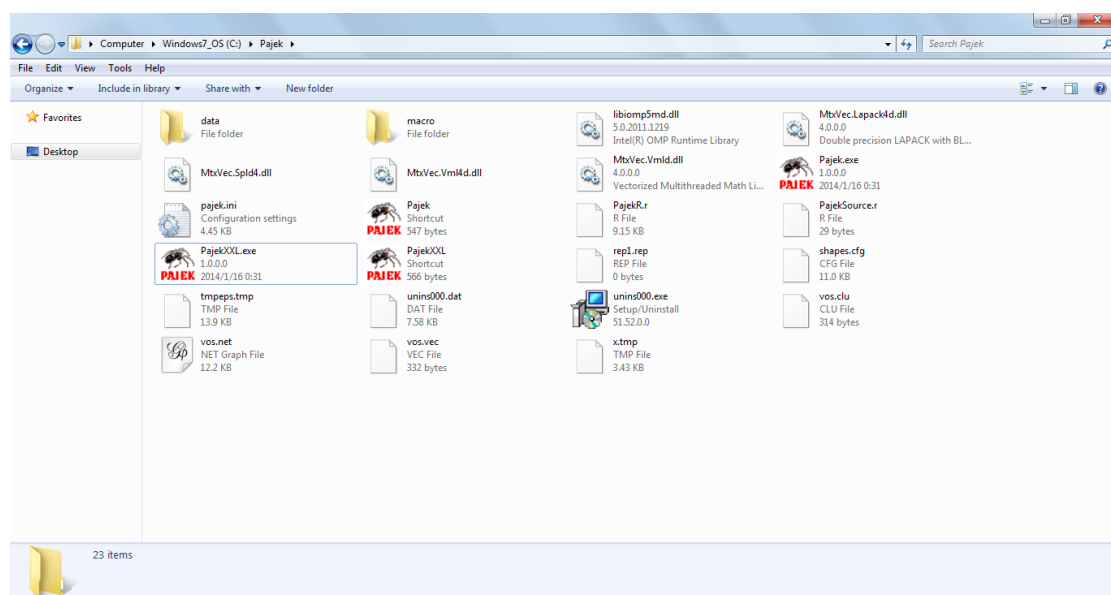








e. A folder window will open display the Pajek Program Folder and shortcut icon. Or go to the Pajek installation folder. The default is: C:\pajek



To start Pajek, just double click the Pajek Shortcut.

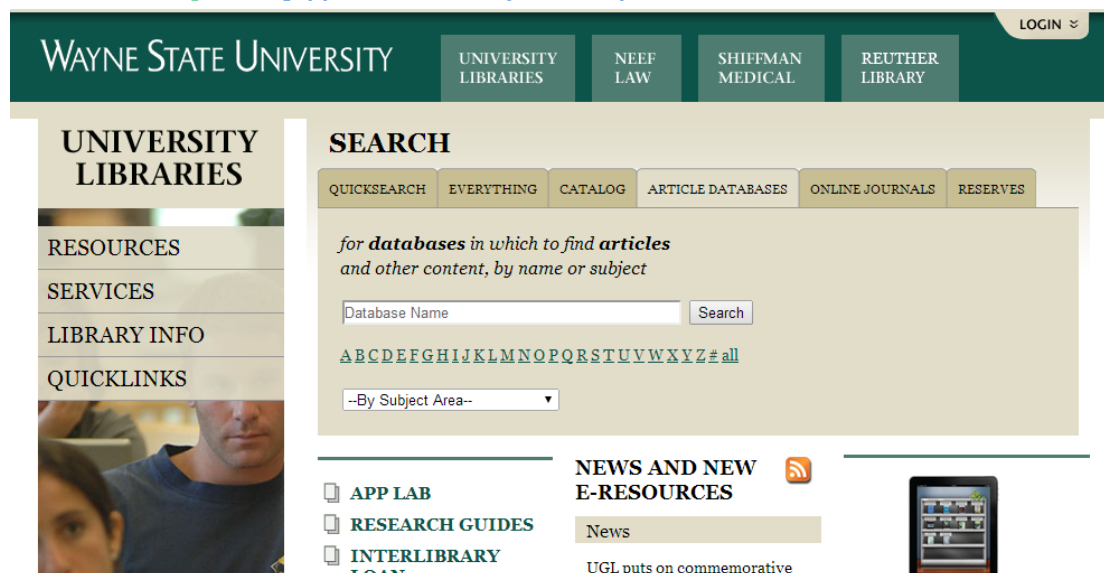
Note: This completes the one time installation of the OverlayToolKit software and the Pajek software.

Step4. Create an overlay map using the Web of Science

This steps describe How to create an overlay map using the Web of Science version 5.13.1 and the OverlayToolKit program wc10.exe and mapping it with Pajek.

Step1. Login into your University Library and access the Web of Science database, find the access in the homepage of you library.

For example <http://www.lib.wayne.edu/>



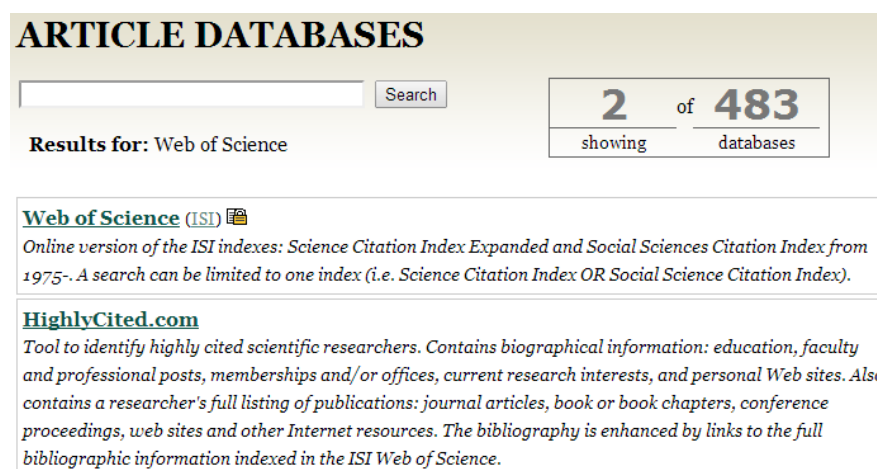
The image shows the Wayne State University Library homepage. At the top, there is a dark green header with the text "WAYNE STATE UNIVERSITY" and navigation links for "UNIVERSITY LIBRARIES", "NEEF LAW", "SHIFFMAN MEDICAL", and "REUTHER LIBRARY". A "LOGIN" button is in the top right corner. Below the header, the page is divided into two main sections. On the left, under "UNIVERSITY LIBRARIES", there is a vertical menu with links: "RESOURCES", "SERVICES", "LIBRARY INFO", and "QUICKLINKS". On the right, under "SEARCH", there is a search interface with tabs for "QUICKSEARCH", "EVERYTHING", "CATALOG", "ARTICLE DATABASES", "ONLINE JOURNALS", and "RESERVES". The "ARTICLE DATABASES" tab is selected. Below the tabs, there is a search box labeled "Database Name" with a "Search" button. Below the search box, there is a list of database names: "A B C D E F G H I J K L M N O P Q R S T U V W X Y Z # all". Below the list, there is a dropdown menu labeled "--By Subject Area--". To the right of the search interface, there is a section titled "NEWS AND NEW E-RESOURCES" with a "News" link and a small image of a computer monitor.

Step2. Enter "Web of Science" into the Search Box, Click Search



The image shows the Wayne State University Library Search page. It has the same header and navigation links as the previous page. The "SEARCH" section is active, and the "ARTICLE DATABASES" tab is selected. The search box now contains the text "Web of Science". The "Search" button is visible. Below the search box, there is a list of database names: "A B C D E F G H I J K L M N O P Q R S T U V W X Y Z # all". Below the list, there is a dropdown menu labeled "--By Subject Area--".

Step3. Click the Web of Science database icon



The image shows the Wayne State University Library Article Databases page. The header is the same. The "ARTICLE DATABASES" section is active. There is a search box with a "Search" button. Below the search box, there is a results summary: "Results for: Web of Science" and "2 of 483 showing databases". Below the results summary, there is a list of database icons and descriptions. The first icon is "Web of Science (ISI)" with a description: "Online version of the ISI indexes: Science Citation Index Expanded and Social Sciences Citation Index from 1975-. A search can be limited to one index (i.e. Science Citation Index OR Social Science Citation Index)". The second icon is "HighlyCited.com" with a description: "Tool to identify highly cited scientific researchers. Contains biographical information: education, faculty and professional posts, memberships and/or offices, current research interests, and personal Web sites. Also contains a researcher's full listing of publications: journal articles, book or book chapters, conference proceedings, web sites and other Internet resources. The bibliography is enhanced by links to the full bibliographic information indexed in the ISI Web of Science."

ARTICLE DATABASES

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

Jump to a subject

Databases licensed through "ISI"

Filter by title

5 of 483

showing

databases

[Arts & humanities citation index](#) (ISI)

Arts & Humanities Citation Index is a multidisciplinary index covering the journal literature of the arts and humanities. It fully covers 1,144 of the world's ... [\[full description\]](#)

[Biological abstracts](#) (ISI)

Contains bibliographical references with abstracts in English from life sciences research journals published worldwide.

[Science citation index](#) (ISI)

An international interdisciplinary index to the literature of science.

[Social Sciences Citation Index](#) (ISI)

Over 2,474 journals across 50 social science disciplines, as well as 3,500 of the world's leading scientific and technical journals, to 1956.

[Web of Science](#) (ISI)

Online version of the ISI indexes: Science Citation Index Expanded and Social Sciences Citation Index from 1975-. A search can be limited to one index (i.e. Science ... [\[full description\]](#)

EZProxy Login

In order to use this resource you must enter your [AccessID](#) and password (the same one as Pipeline, Blackboard, and WSU email).

AccessID:

Password:

Login

Note: these library instructions may vary depending upon your local situation.

Step4. *The Web of Science search interface will open.*

Web of Science™ InCites® Journal Citation Reports® Essential Science Indicators™ EndNote®

WEB OF SCIENCE™ THOMSON REUTERS™

Search Web of Science™ Core Collection My Tools Search History Marked List

Welcome to the new Web of Science! View a brief tutorial.

Basic Search

Example: oil spill* mediterranean

Topic

Search

Click here for tips to improve your search.

+ Add Another Field

TIMESPAN

All years

From 1900 to 2014

MORE SETTINGS

Step5. Conduct your search you wish to map.

For example, to search for all of Wayne State University publications for all year. Search: AD = Wayne State University; Timespan: all year
Data last updated: 2014-03-28.

Basic Search

"Wayne State Univ"

Organization-E...

Search

Finds papers from organizations with identified name variants.
 Select available organizations from the Index.

Select from Index

+ Add Another Field

TIMESPAN

All years

From 1900 to 2014

Web of Science™ InCites® Journal Citation Reports® Essential Science Indicators™ EndNote®

WEB OF SCIENCE™ THOMSON REUTERS™

Back to Search My Tools Search History Marked List

Results: 67,736
 (from Web of Science Core Collection)

You searched for:
 ORGANIZATION-ENHANCED:
 ("Wayne State Univ")
 Timespan-All years. Indexes=SCI-
 EXPANDED, SSCI, A&HCI, CPCI-S,
 CPCI-SSH, CCR-EXPANDED, IC.
 ...Less

Create Alert

Refine Results

Search within results for...

Web of Science Categories

BIOCHEMISTRY MOLECULAR

Sort by: Publication Date -- newest to oldest

Page 1 of 6,774

Select Page

Save to EndNote online

Add to Marked List

Analyze Results
 Citation Report feature not available. [?]

1. **The Desiring-Image: Gilles Deleuze and Contemporary Queer Cinema**
 By: Richmond, Scott C.
 CINEMA JOURNAL Volume: 53 Issue: 2 Pages: 164-169 Published: WIN 2014
 Full Text
2. **Efficient Bayesian sampling plans for exponential distributions with type-I-censored samples**
 By: Tsai, Tzong-Ru; Chiang, Jyun-You; Liang, TaChen; et al.
 JOURNAL OF STATISTICAL COMPUTATION AND SIMULATION Volume: 84 Issue: 5 Pages: 964-981 Published: MAY 4 2014
 Full Text View Abstract
3. **Overexpression of the polarity protein PAR-3 in clear cell renal cell carcinoma is associated with poor prognosis**
 By: Stevens, Joshua B.; Liu, Guo; Abdallah, Batoul Y.; et al.
 INTERNATIONAL JOURNAL OF CANCER Volume: 134 Issue: 9 Pages: 2074-2087 Published: MAY 1 2014
 Full Text View Abstract

Times Cited: 0
 (from Web of Science Core Collection)

Times Cited: 0
 (from Web of Science Core Collection)

Times Cited: 0
 (from Web of Science Core Collection)

Step6. Analyze Results

Set the following three parameters:

- a. Rank the Records by this field: Web of Science Categories
- b. Set Display Options to Show Top 500 results
- c. Minimum Record count: 0
- d. Click

Results Analysis

<<Back to previous page

67,736 records, ORGANIZATION-ENHANCED: ("Wayne State Univ")

Rank the records by this field:	Set display options:	Sort by:
Publication Years Research Areas Source Titles Web of Science Categories	Show the top <input type="text" value="500"/> Results. Minimum record count (threshold): <input type="text" value="0"/>	<input checked="" type="radio"/> Record count <input type="radio"/> Selected field

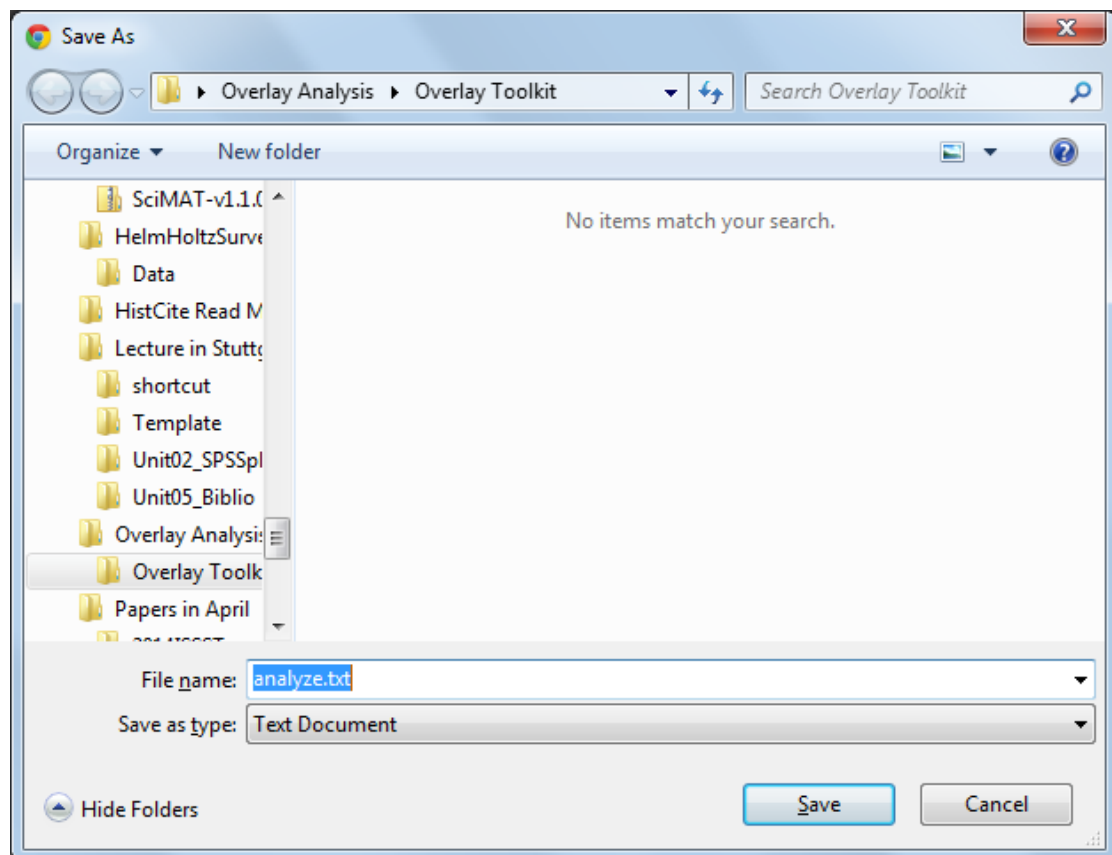
Use the checkboxes below to view the records. You can choose to view those selected records, or you can exclude them (and view the others).

Field: Web of Science Categories	Record Count	% of 67736	Bar Chart
<input type="checkbox"/> BIOCHEMISTRY MOLECULAR BIOLOGY	5392	7.960 %	<div></div>
<input type="checkbox"/> ONCOLOGY	4549	6.716 %	<div></div>
<input type="checkbox"/> NEUROSCIENCES	3682	5.436 %	<div></div>
<input type="checkbox"/> PHARMACOLOGY PHARMACY	3218	4.751 %	<div></div>
<input type="checkbox"/> CELL BIOLOGY	3008	4.441 %	<div></div>
<input type="checkbox"/> OBSTETRICS GYNECOLOGY	2967	4.380 %	<div></div>

Save Analysis Data to File

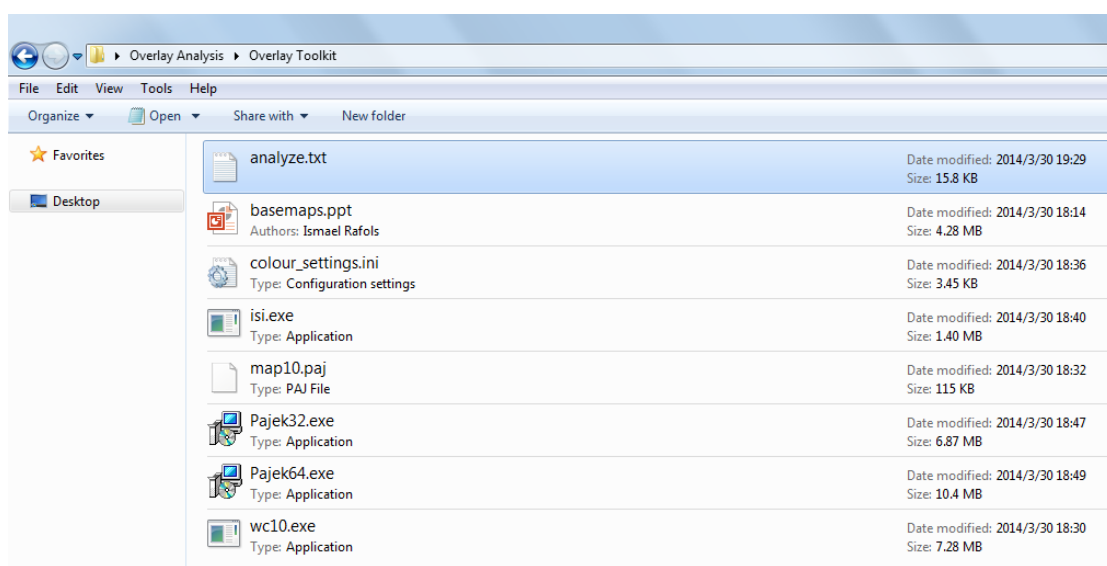
☒ Data rows displayed in table
☐ All data rows (up to 200,000)

- e. After the records are analyzed a window will display the results.
- f. Check the on the right. Click Save at the window and Navigate to your desired location and Click Save.



- g. After the file is Downloaded ,Click Open Folder You should see the file

Analyze.txt



Note: If you open the file with Excel it will display: The Web of Science Categories, the Record Count and the % of those publications in each Science Categories. It is these counts that Pajek uses to draw the size of the Science Categories circles. Note: the Record Count Total will often be more than the search result count because the same publication may be assigned to more than one Science Category.

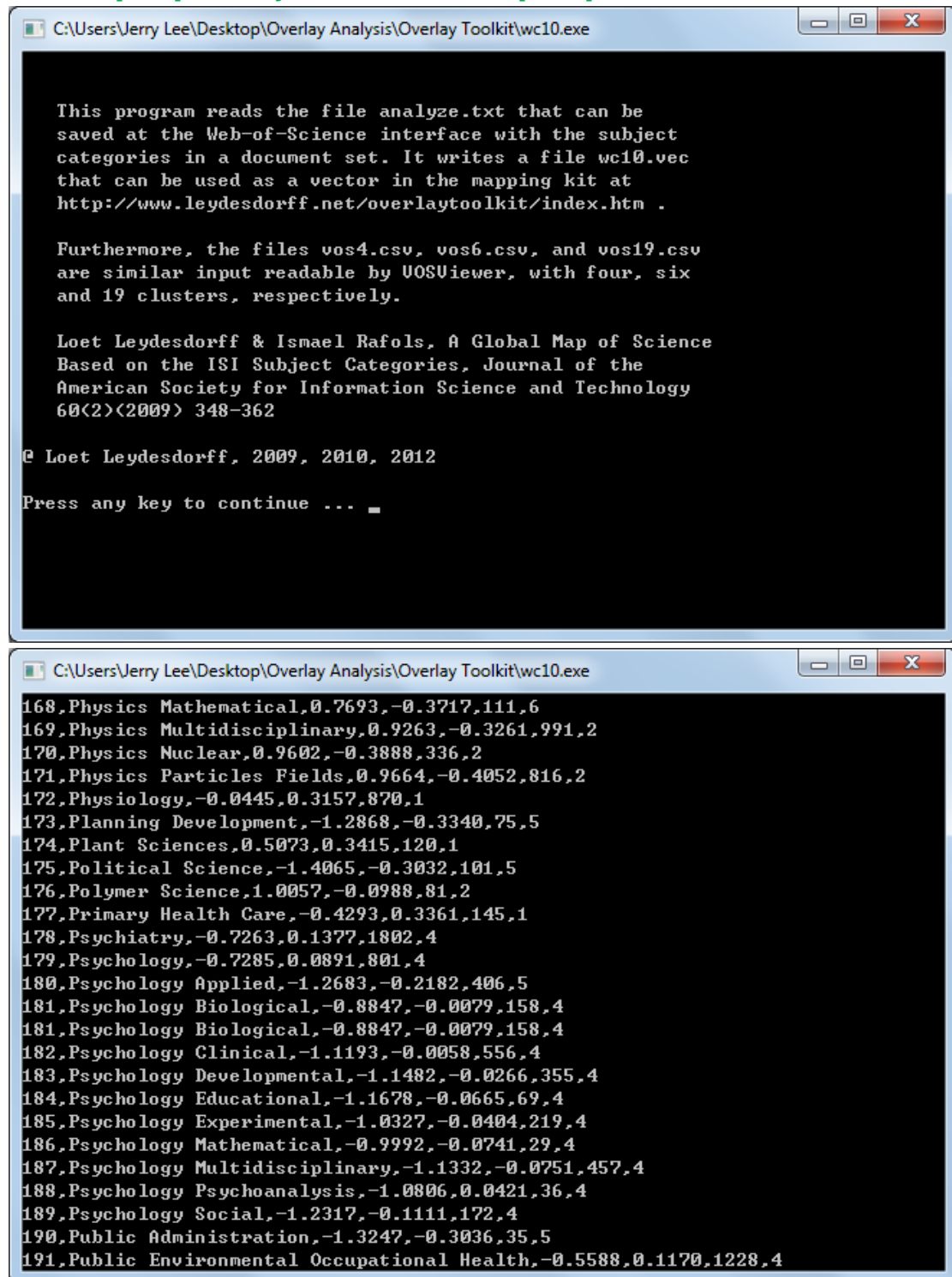
The screenshot shows an Excel spreadsheet with the following data:

	A	B	C
1	Web of Science Categories	records	% of 67736
2	BIOCHEMISTRY MOLECULAR BIOLOGY	5392	7.96
3	ONCOLOGY	4549	6.716
4	NEUROSCIENCES	3682	5.436
5	PHARMACOLOGY PHARMACY	3218	4.751
6	CELL BIOLOGY	3008	4.441
7	OBSTETRICS GYNECOLOGY	2967	4.38
8	CLINICAL NEUROLOGY	2824	4.169
9	MEDICINE RESEARCH EXPERIMENTAL	2368	3.496
10	PEDIATRICS	2360	3.484
11	SURGERY	2313	3.415
12	BIOLOGY	2125	3.137
13	CHEMISTRY MULTIDISCIPLINARY	2090	3.086
14	PSYCHIATRY	1802	2.66
15	CARDIAC CARDIOVASCULAR SYSTEMS	1769	2.612
16	IMMUNOLOGY	1725	2.547
17	PATHOLOGY	1714	2.53
18	PERIPHERAL VASCULAR DISEASE	1501	2.216
19	HEMATOLOGY	1486	2.194

h. The next step is to Convert the Analyze.txt with the wc10.exe dos program.

Note: Make sure the wc10.exe file is in the same folder as the Analyze.txt file.

- i. *Double Click wc10.exe. Click Run at the Security Window, A Dos window will open, press any to continue at the prompt.*



```
C:\Users\Jerry Lee\Desktop\Overlay Analysis\Overlay Toolkit\wc10.exe

This program reads the file analyze.txt that can be
saved at the Web-of-Science interface with the subject
categories in a document set. It writes a file wc10.vec
that can be used as a vector in the mapping kit at
http://www.leydesdorff.net/overlaytoolkit/index.htm .

Furthermore, the files vos4.csv, vos6.csv, and vos19.csv
are similar input readable by UOSViewer, with four, six
and 19 clusters, respectively.

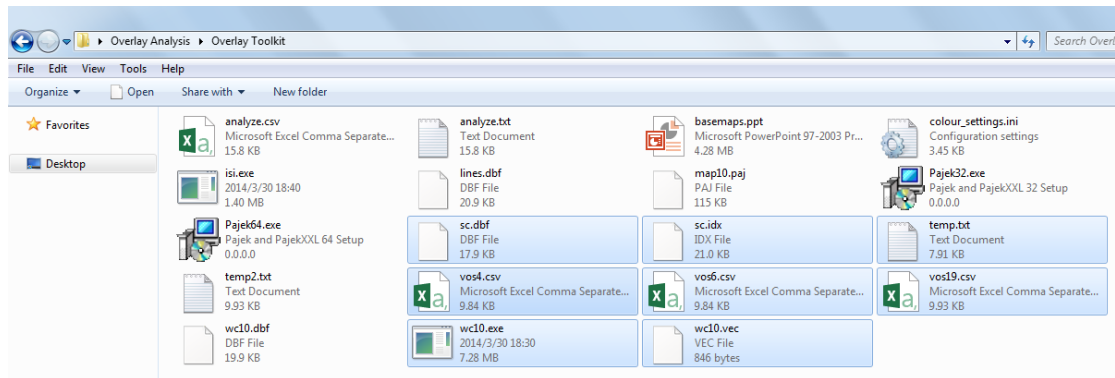
Loet Leydesdorff & Ismael Rafols, A Global Map of Science
Based on the ISI Subject Categories, Journal of the
American Society for Information Science and Technology
60(2)<2009> 348-362

© Loet Leydesdorff, 2009, 2010, 2012

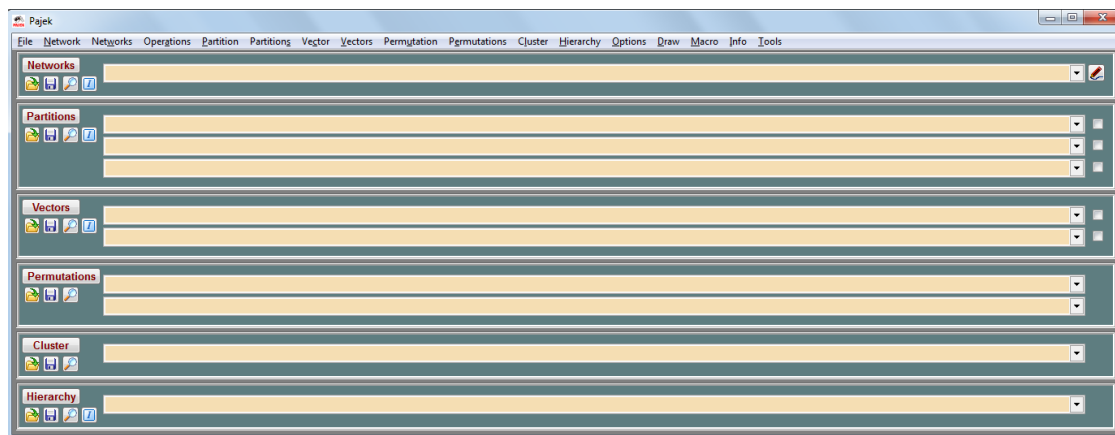
Press any key to continue ... _

168,Physics Mathematical,0.7693,-0.3717,111,6
169,Physics Multidisciplinary,0.9263,-0.3261,991,2
170,Physics Nuclear,0.9602,-0.3888,336,2
171,Physics Particles Fields,0.9664,-0.4052,816,2
172,Physiology,-0.0445,0.3157,870,1
173,Planning Development,-1.2868,-0.3340,75,5
174,Plant Sciences,0.5073,0.3415,120,1
175,Political Science,-1.4065,-0.3032,101,5
176,Polymer Science,1.0057,-0.0988,81,2
177,Primary Health Care,-0.4293,0.3361,145,1
178,Psychiatry,-0.7263,0.1377,1802,4
179,Psychology,-0.7285,0.0891,801,4
180,Psychology Applied,-1.2683,-0.2182,406,5
181,Psychology Biological,-0.8847,-0.0079,158,4
181,Psychology Biological,-0.8847,-0.0079,158,4
182,Psychology Clinical,-1.1193,-0.0058,556,4
183,Psychology Developmental,-1.1482,-0.0266,355,4
184,Psychology Educational,-1.1678,-0.0665,69,4
185,Psychology Experimental,-1.0327,-0.0404,219,4
186,Psychology Mathematical,-0.9992,-0.0741,29,4
187,Psychology Multidisciplinary,-1.1332,-0.0751,457,4
188,Psychology Psychoanalysis,-1.0806,0.0421,36,4
189,Psychology Social,-1.2317,-0.1111,172,4
190,Public Administration,-1.3247,-0.3036,35,5
191,Public Environmental Occupational Health,-0.5588,0.1170,1228,4
```

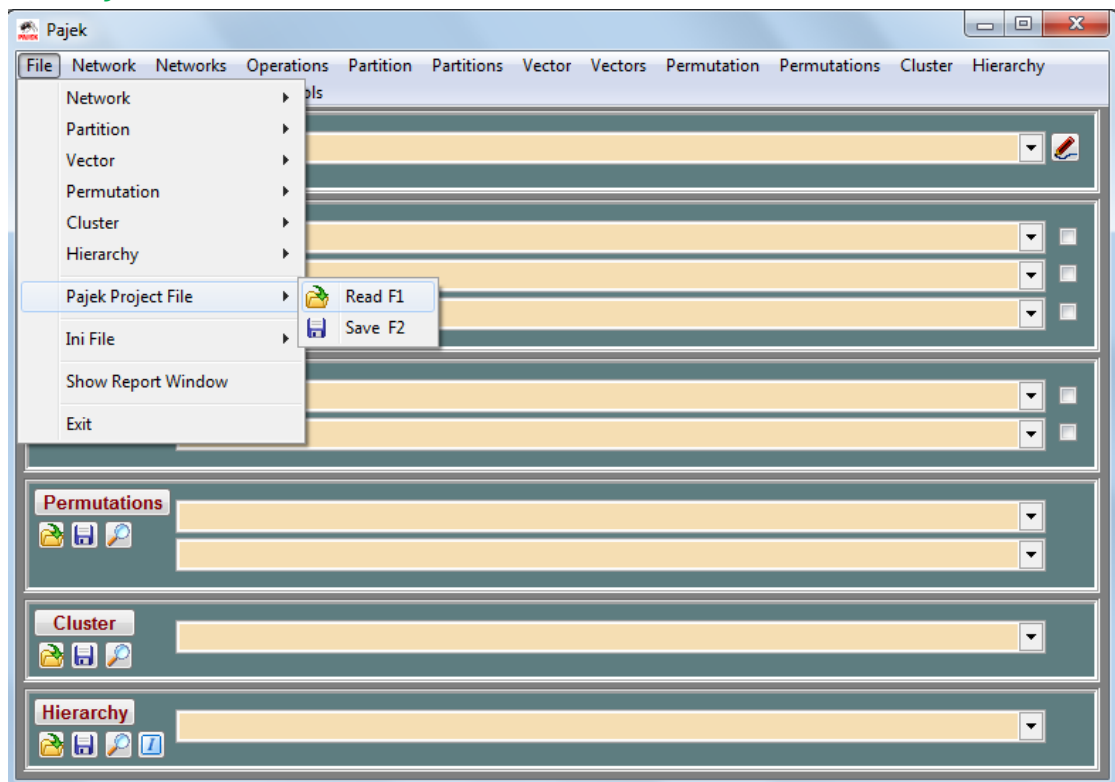
- j. *The wc10.exe creates nine output files:*



k. Start Pajek by clicking on the program shortcut icon. The Pajek program screen will open.



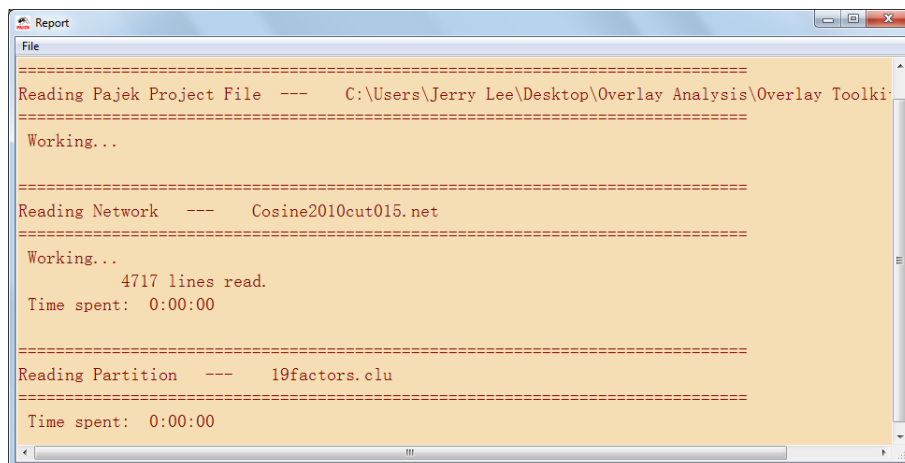
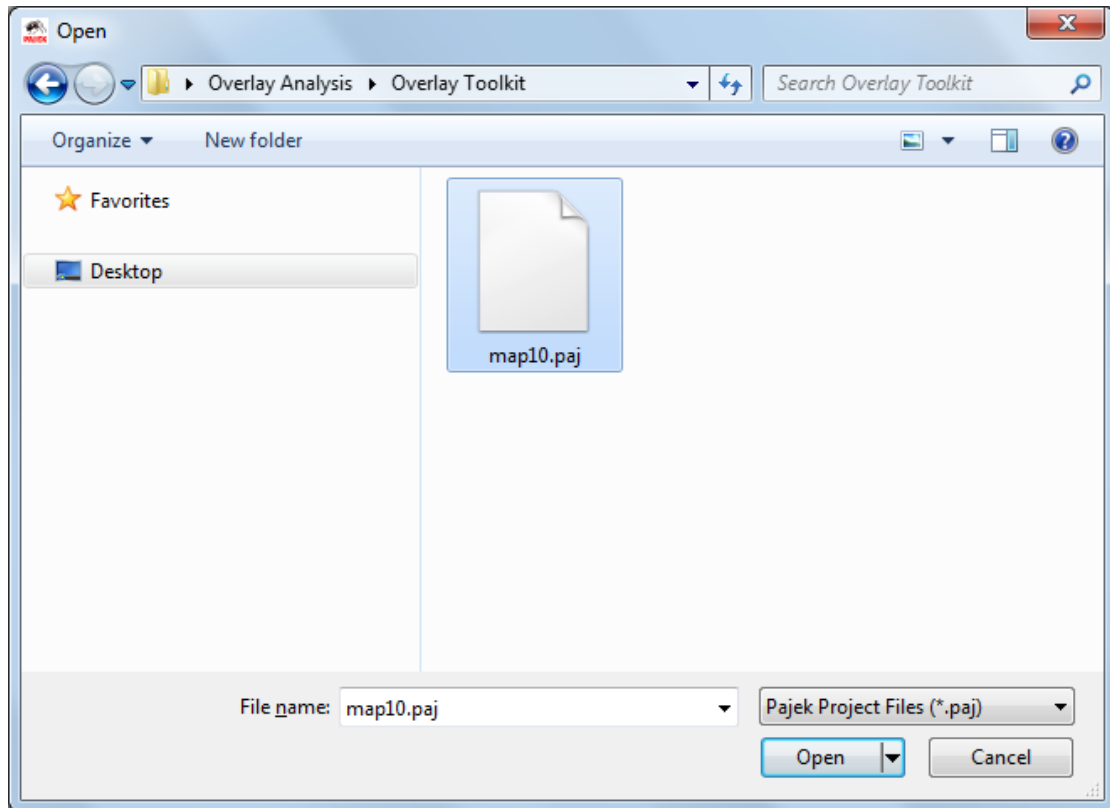
l. Load the base 2010 Science map. Click File, then Click File, then Pajek Project File, then Read F1

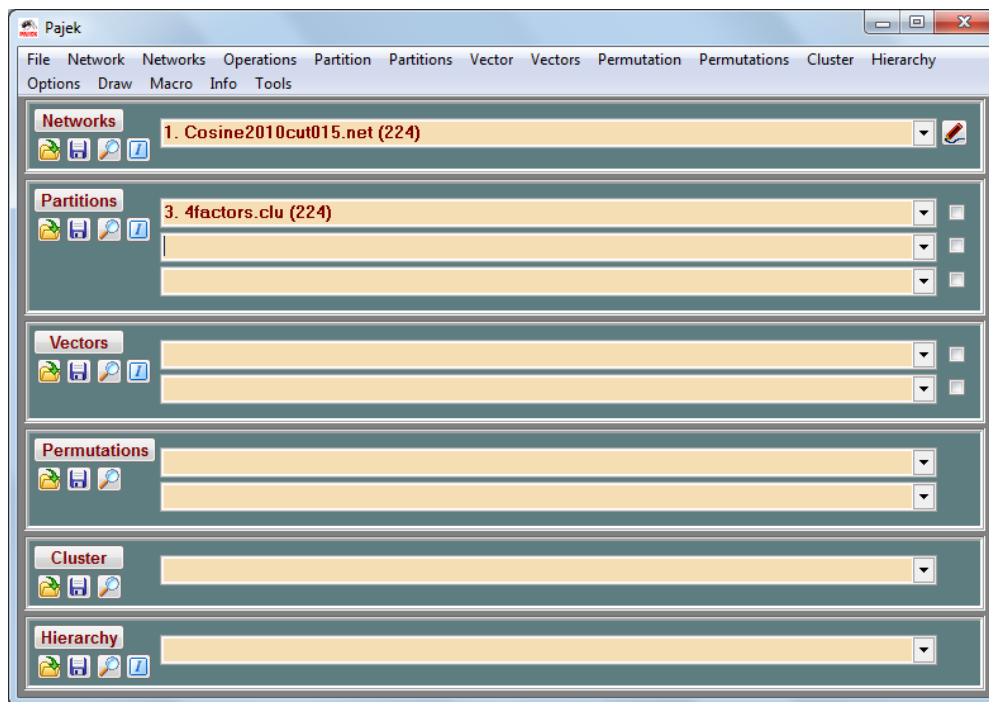


m. Navigate to the folder where the file map10.paj is, select it, and Click Open.

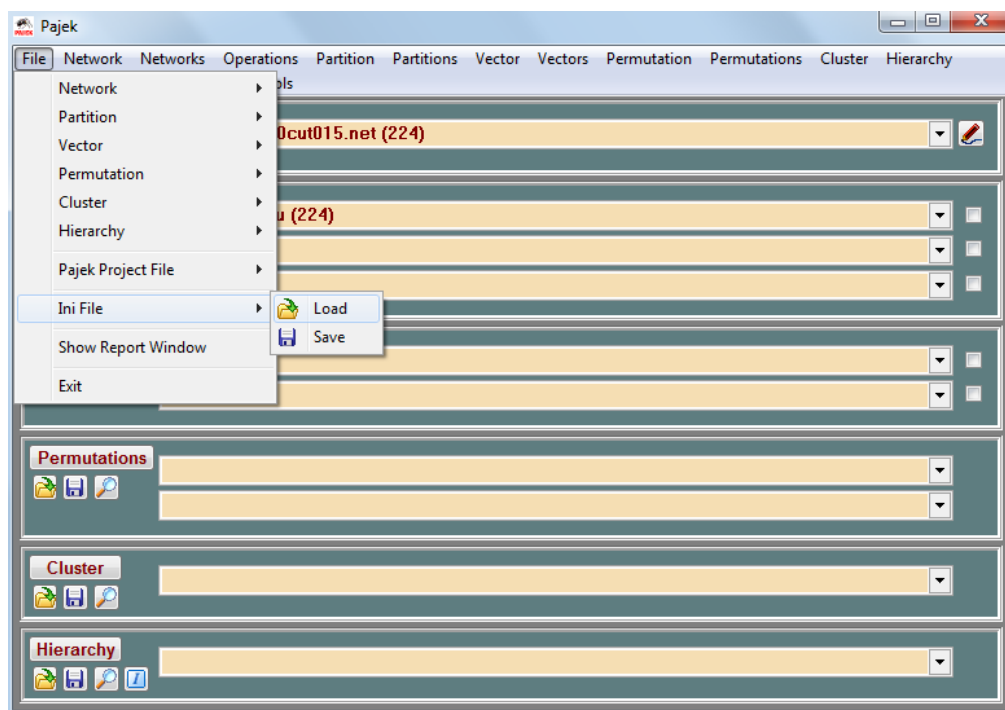
A Report window will open. Close it.

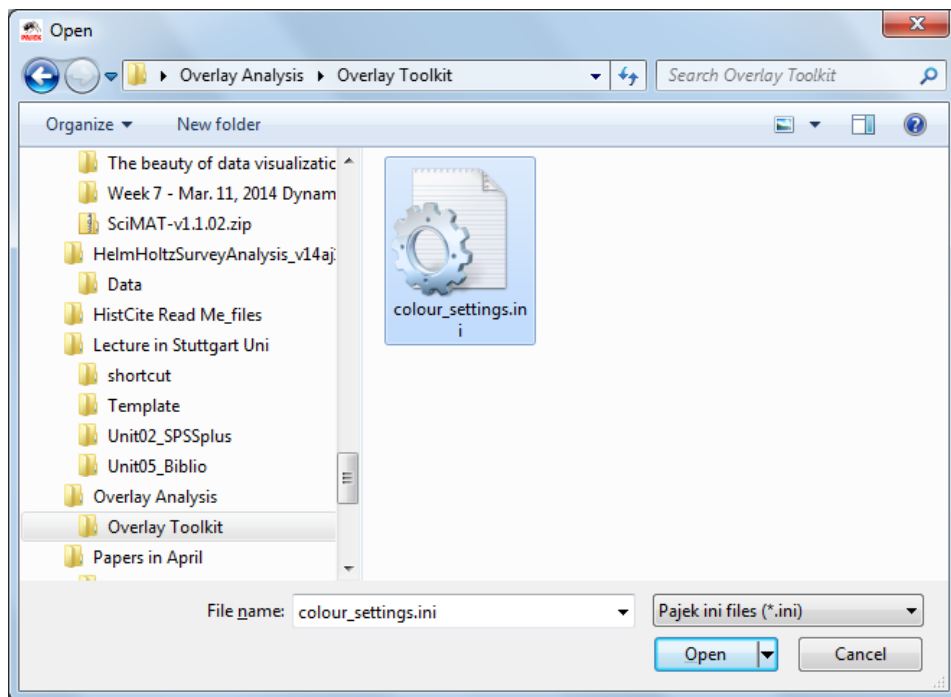
Pajek will display that the project has been loaded.



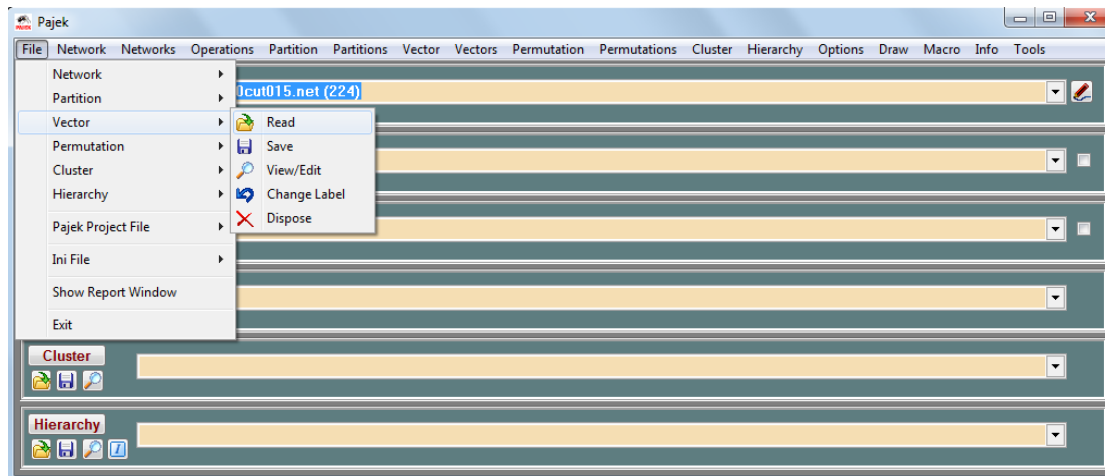


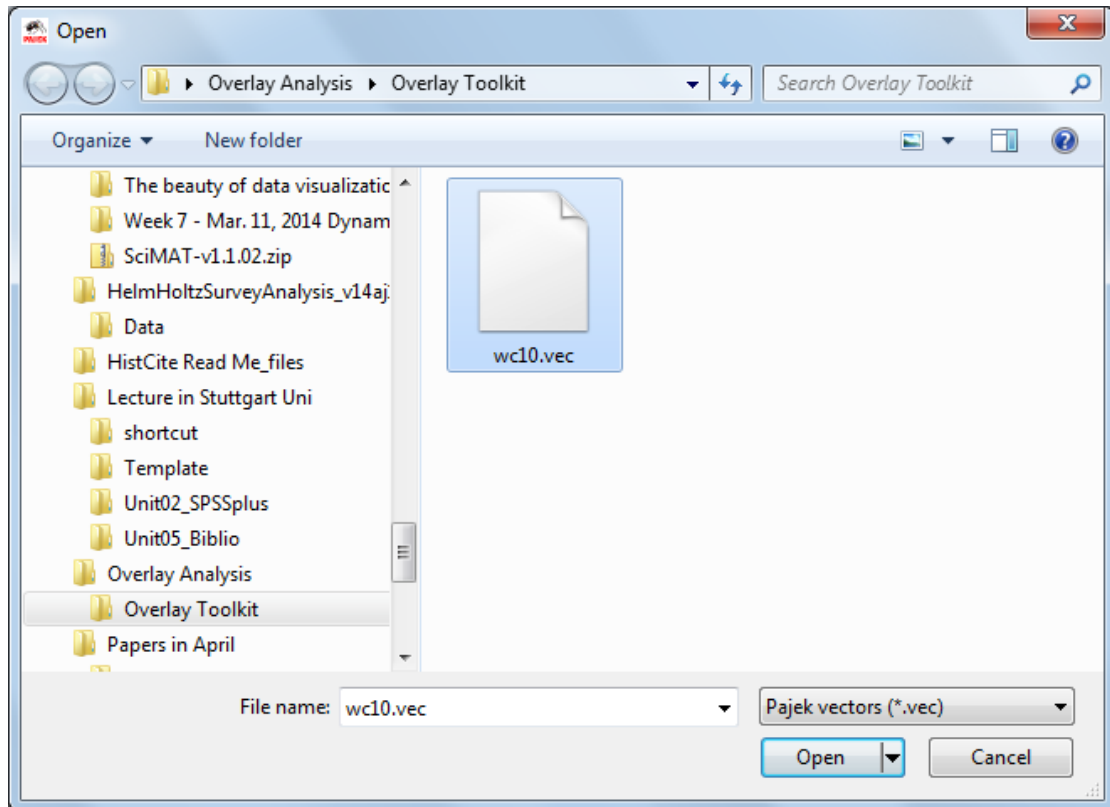
n. Next load the ini file to set the standardized color set. On the menu click Options INI File, then Load



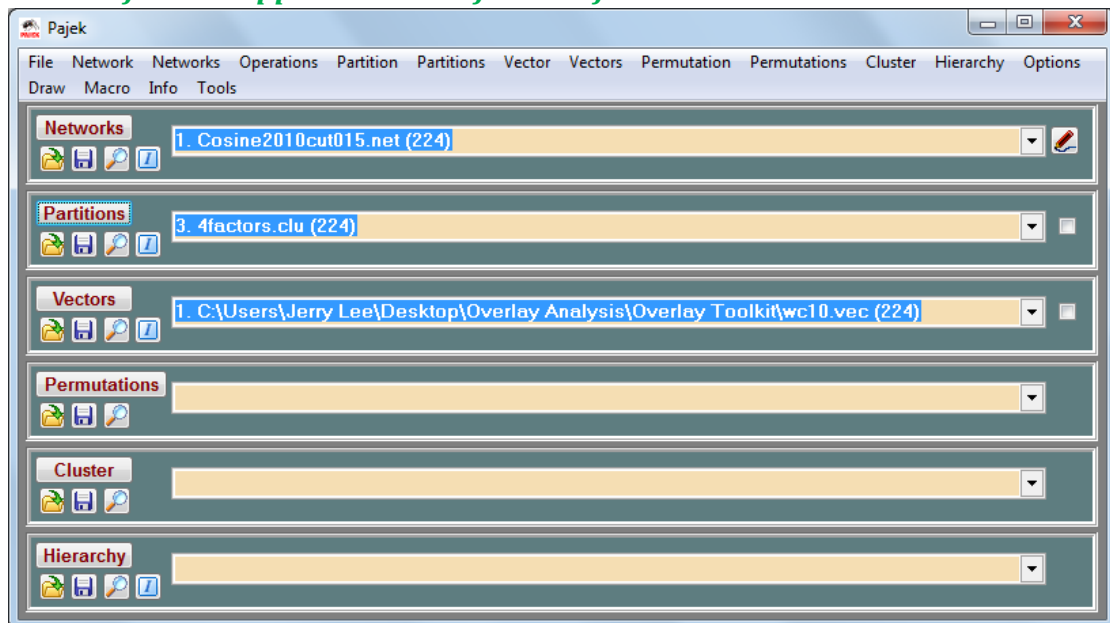


- o. Next load the new overlay vector file.
Click File>Vector>Read
Navigate to the "wc10.vec" file, select it, and click Open.
A report window opens, click Close*

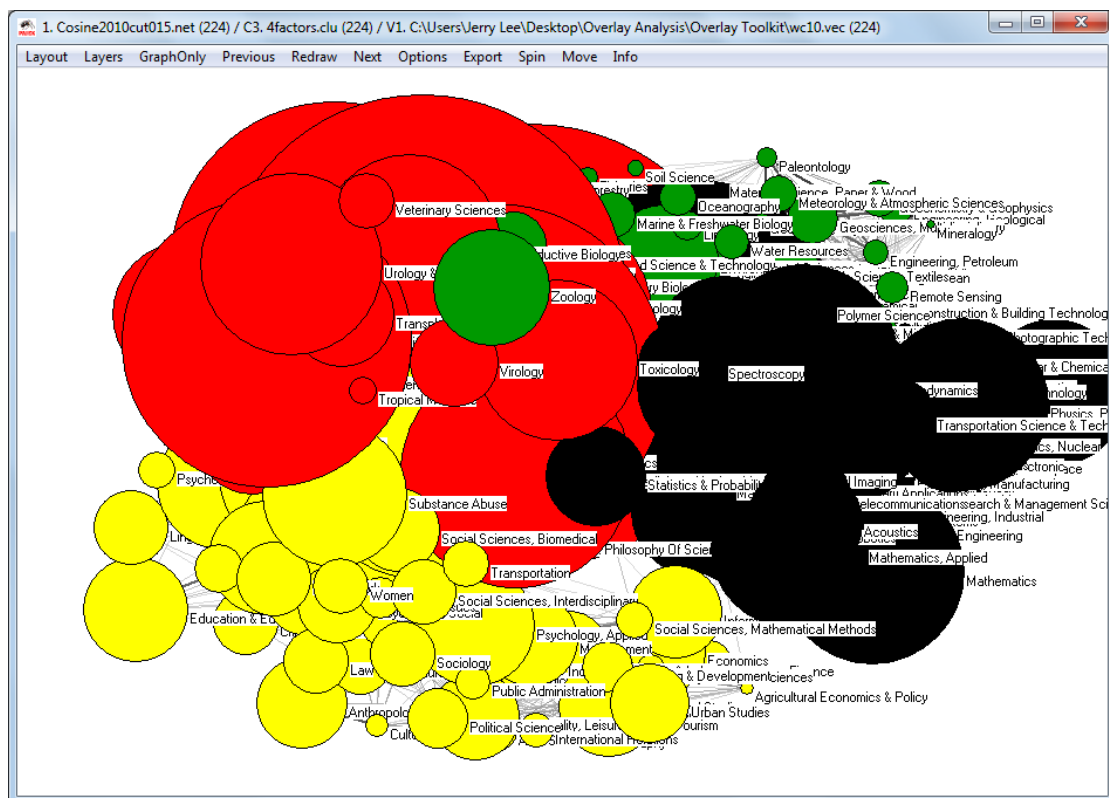
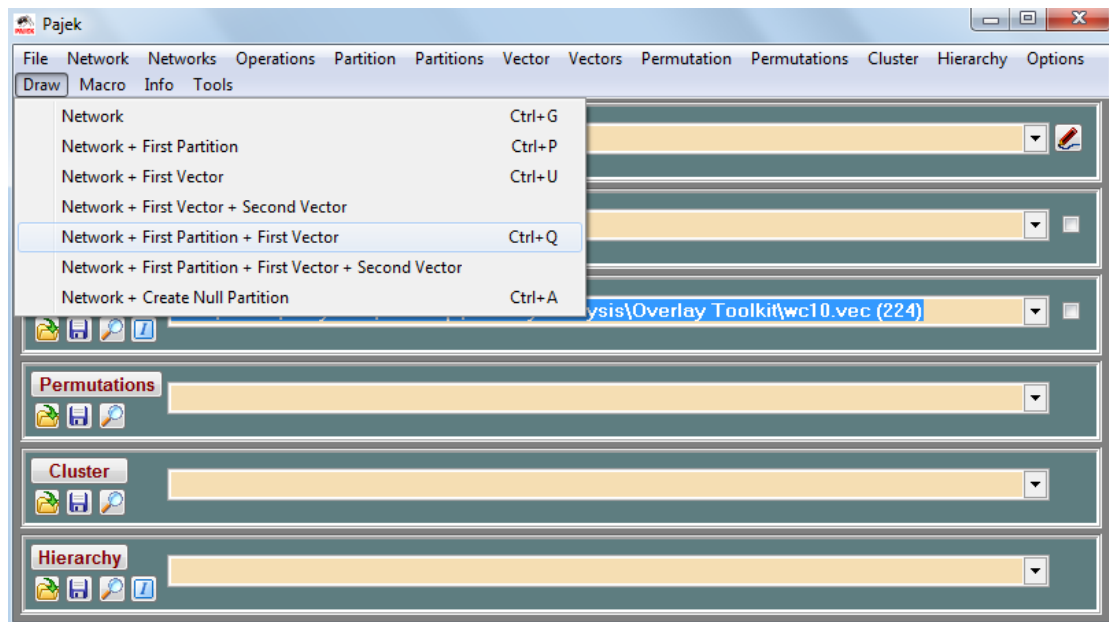




The file will appear in the Pajek interface Vector window

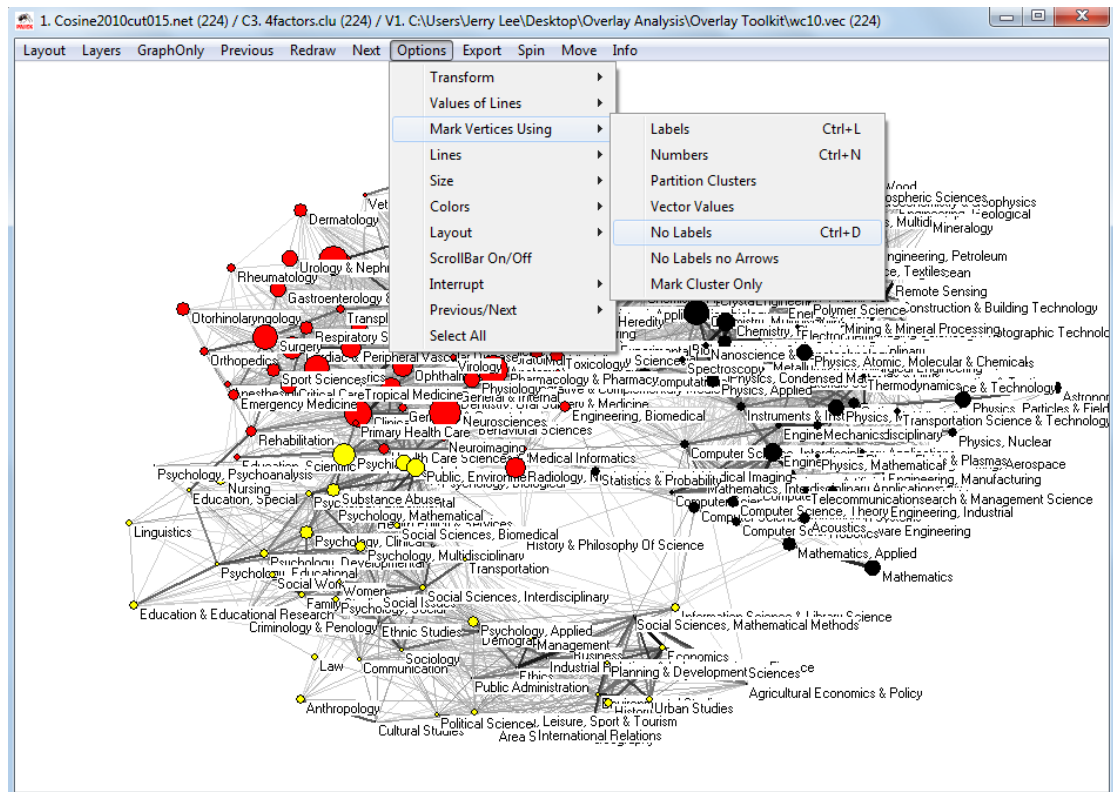


*p. To Draw the overlap map, on the menu click
Draw>Draw-Partition-Vector
A map will be drawn.*

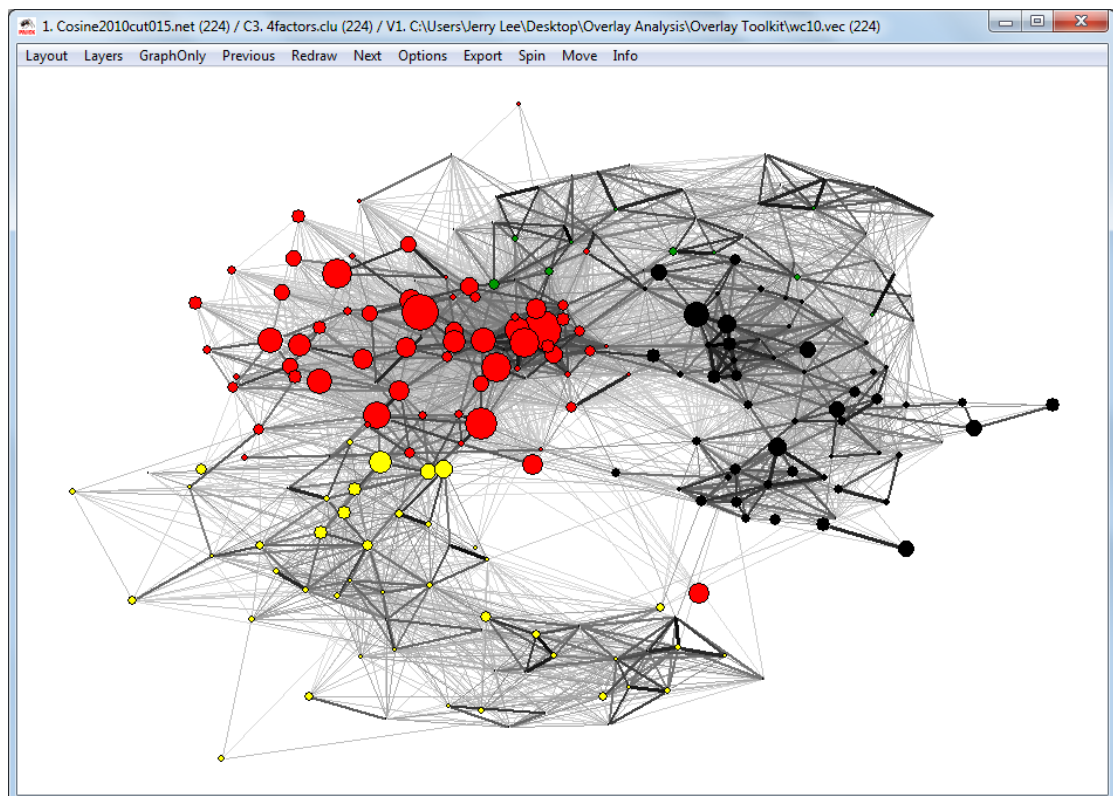


q. To resize the circles, on the menu click Options then Size, then of Vertices Reduce the unit size to a lower number, or set it to 0 for auto sizing. Conversely, if the circles are too small, increase the

r. To toggle the labels off or on, Click Options, Mark Vertices Using, No Labels or Labels.



Here is the final overlay sample map.



Results: 67,736

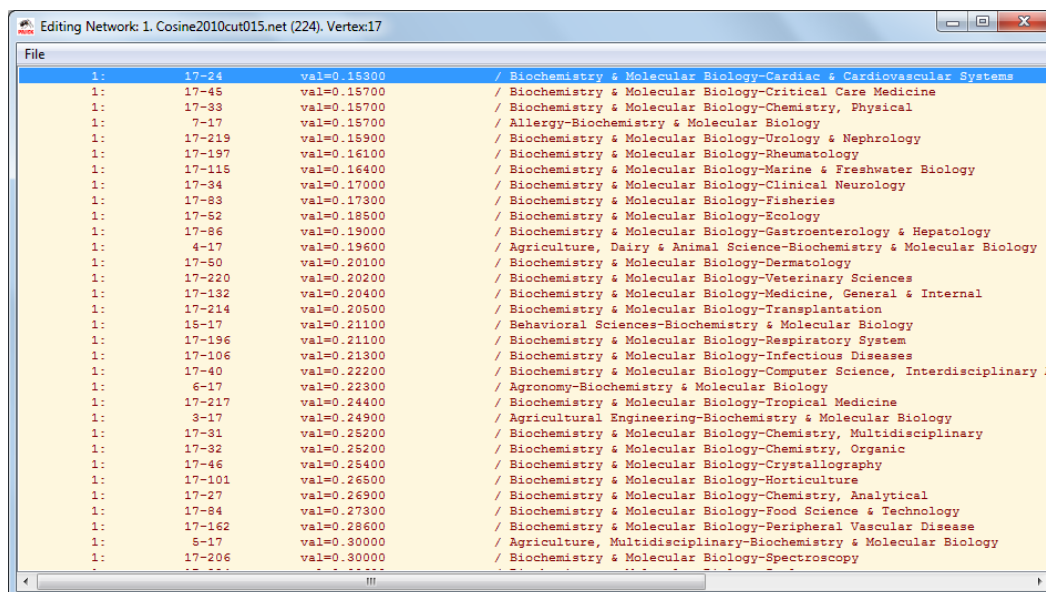
(from Web of Science Core Collection)

You searched for:

ORGANIZATION-ENHANCED:("Wayne State Univ")

Timespan=All years. Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, CCR-EXPANDED, IC.

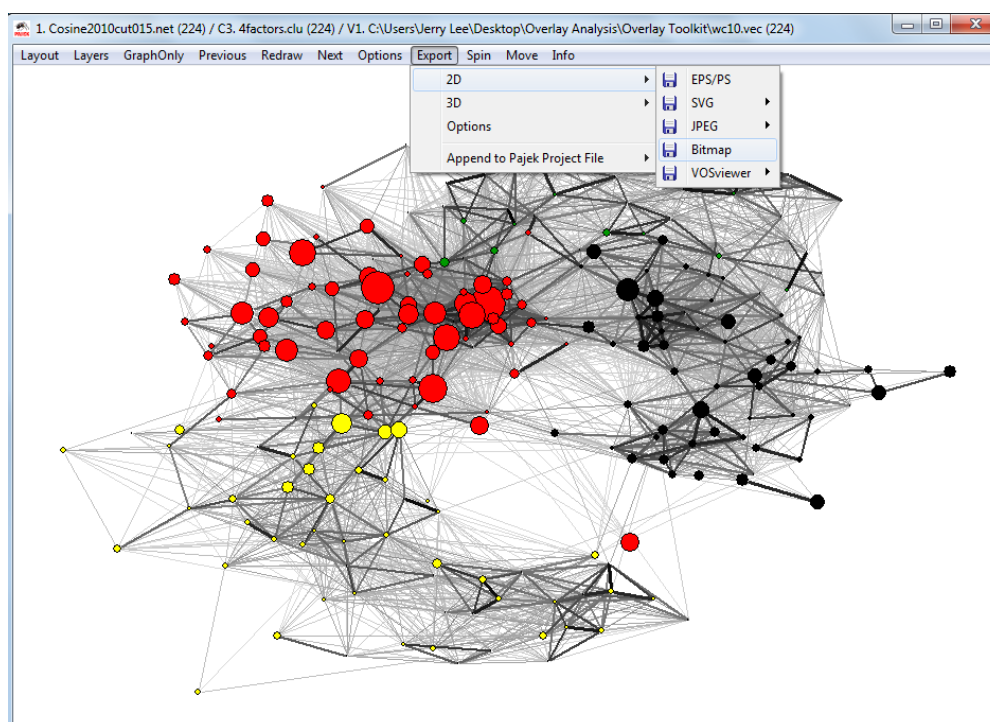
- s. To view the labels, on the menu, click Options, Vertices, and Labels.
To see the Science Categories, right click on a node or vertices*



Editing Network: 1. Cosine2010cut015.net (224). Vertex:17

File			
1:	17-24	val=0.15300	/ Biochemistry & Molecular Biology-Cardiac & Cardiovascular Systems
1:	17-45	val=0.15700	/ Biochemistry & Molecular Biology-Critical Care Medicine
1:	17-33	val=0.15700	/ Biochemistry & Molecular Biology-Chemistry, Physical
1:	7-17	val=0.15700	/ Allergy-Biochemistry & Molecular Biology
1:	17-219	val=0.15900	/ Biochemistry & Molecular Biology-Urology & Nephrology
1:	17-197	val=0.16100	/ Biochemistry & Molecular Biology-Rheumatology
1:	17-115	val=0.16400	/ Biochemistry & Molecular Biology-Marine & Freshwater Biology
1:	17-34	val=0.17000	/ Biochemistry & Molecular Biology-Clinical Neurology
1:	17-83	val=0.17300	/ Biochemistry & Molecular Biology-Fisheries
1:	17-52	val=0.18500	/ Biochemistry & Molecular Biology-Ecology
1:	17-86	val=0.19000	/ Biochemistry & Molecular Biology-Gastroenterology & Hepatology
1:	4-17	val=0.19600	/ Agriculture, Dairy & Animal Science-Biochemistry & Molecular Biology
1:	17-50	val=0.20100	/ Biochemistry & Molecular Biology-Dermatology
1:	17-220	val=0.20200	/ Biochemistry & Molecular Biology-Veterinary Sciences
1:	17-132	val=0.20400	/ Biochemistry & Molecular Biology-Medicine, General & Internal
1:	17-214	val=0.20500	/ Biochemistry & Molecular Biology-Transplantation
1:	15-17	val=0.21100	/ Behavioral Sciences-Biochemistry & Molecular Biology
1:	17-196	val=0.21100	/ Biochemistry & Molecular Biology-Respiratory System
1:	17-106	val=0.21300	/ Biochemistry & Molecular Biology-Infectious Diseases
1:	17-40	val=0.22200	/ Biochemistry & Molecular Biology-Computer Science, Interdisciplinary
1:	6-17	val=0.22300	/ Agronomy-Biochemistry & Molecular Biology
1:	17-217	val=0.24400	/ Biochemistry & Molecular Biology-Tropical Medicine
1:	3-17	val=0.24900	/ Agricultural Engineering-Biochemistry & Molecular Biology
1:	17-31	val=0.25200	/ Biochemistry & Molecular Biology-Chemistry, Multidisciplinary
1:	17-32	val=0.25200	/ Biochemistry & Molecular Biology-Chemistry, Organic
1:	17-46	val=0.25400	/ Biochemistry & Molecular Biology-Crystallography
1:	17-101	val=0.26500	/ Biochemistry & Molecular Biology-Horticulture
1:	17-27	val=0.26900	/ Biochemistry & Molecular Biology-Chemistry, Analytical
1:	17-84	val=0.27300	/ Biochemistry & Molecular Biology-Food Science & Technology
1:	17-162	val=0.28600	/ Biochemistry & Molecular Biology-Peripheral Vascular Disease
1:	5-17	val=0.30000	/ Agriculture, Multidisciplinary-Biochemistry & Molecular Biology
1:	17-206	val=0.30000	/ Biochemistry & Molecular Biology-Spectroscopy

To make a bitmap picture, on the Draw menu, click Export, then 2D then Bitmap



Repeat steps to create different overlays based on your Web of Science search results.

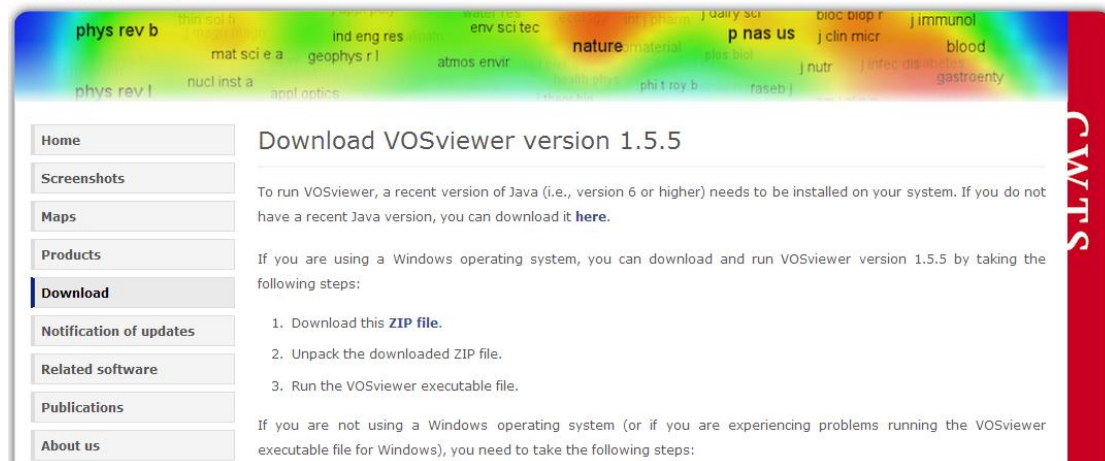
Part.3 Visualization with VOSviewer

The following instructions are how to map your Web of Science Search Results using VOSviewer.

Step1. Download VOSviewer for the PC from this link:

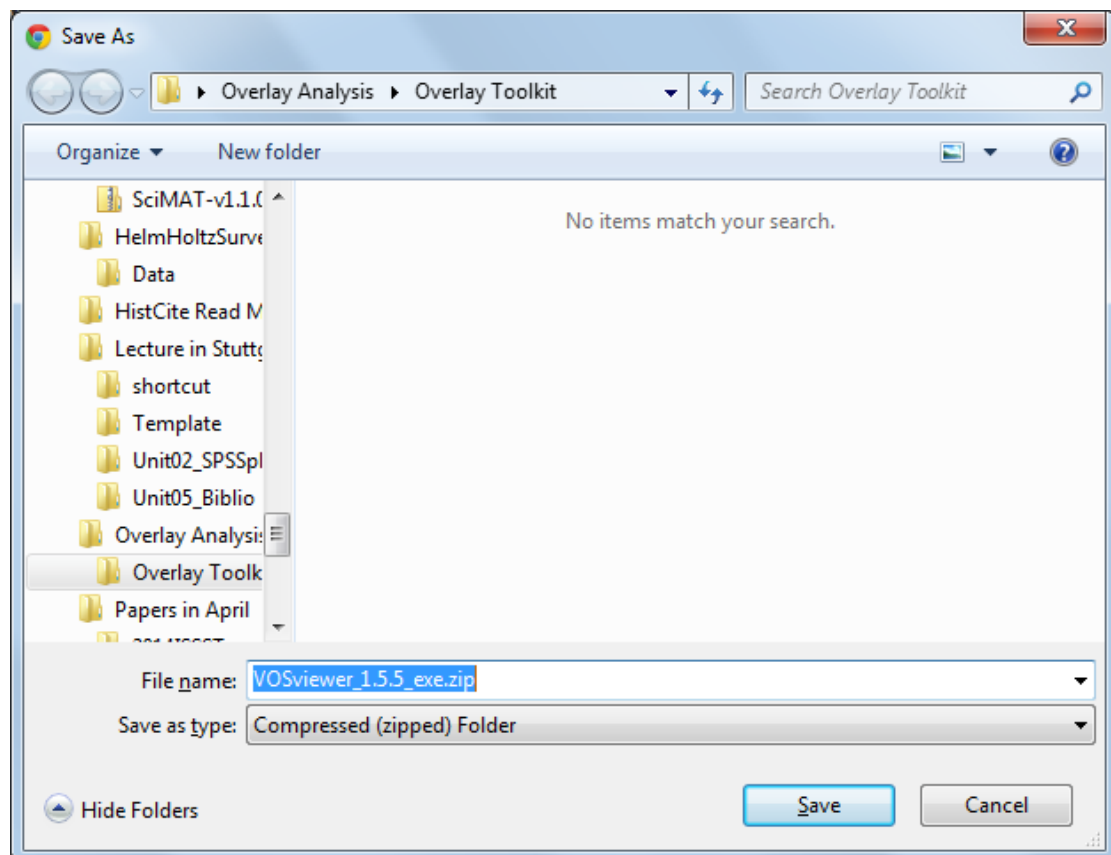
<http://www.vosviewer.com/download/>

VOSviewer



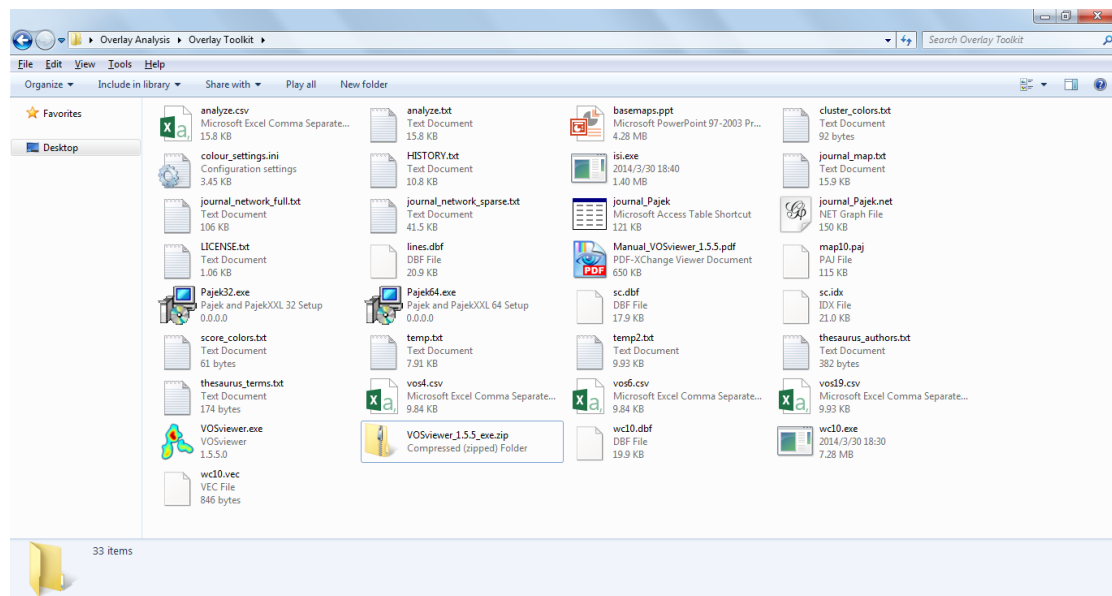
Step2. Click on the “Download this ZIP file” text link. Click Save.

Note: Navigate to desired folder, and save the file “VOSviewer_1.5.5_exe.zip”



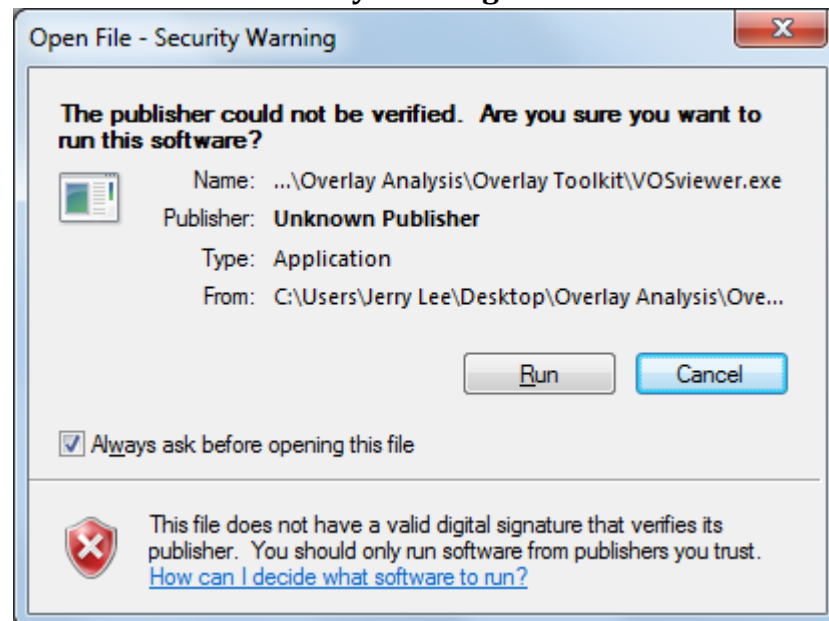
Step3. Unzip the file VOSviewer_1.5.5_exe.zip.

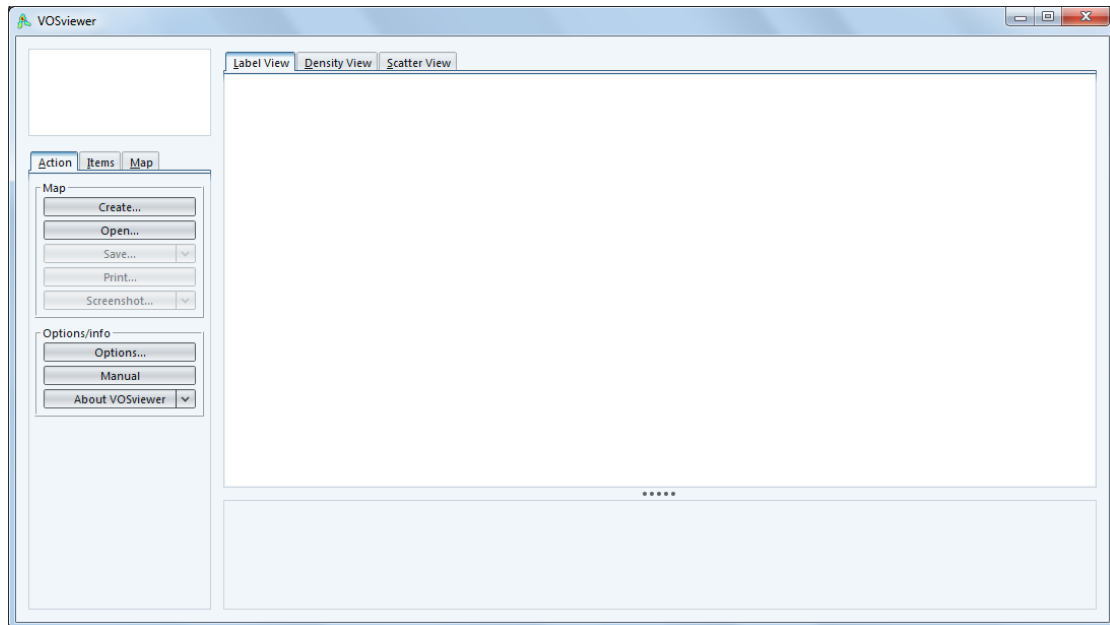
These files will be appear in your folder:



Step4. Double click the VOSviewer.exe file to start the program.

Click Run at the security warning.





Note: Click on the 'Open' tab in VOSviewer.

The program WC10.exe generates three files which can be opened in VOSviewer as the so-called "map-files": vos4.csv, vos6.csv, and vos19.csv.

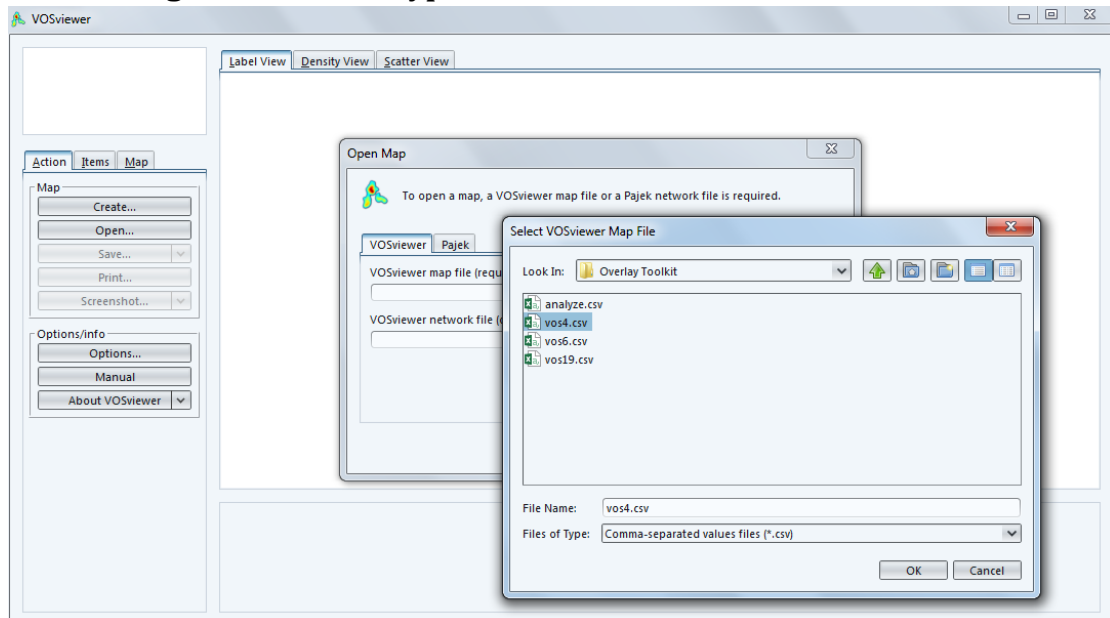
These files are based on 4, 6, or 19 clusters with different colors.

(The extension "csv" stands for "comma-separated variables"; the files can be edited both in excel and using a text editor.)

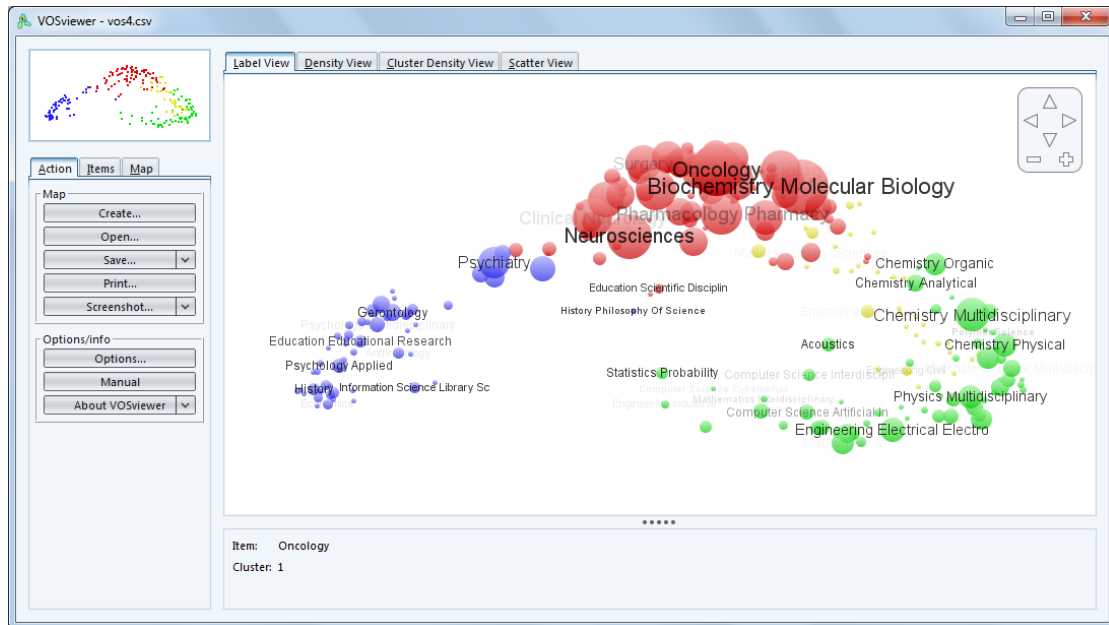
Step5. Open Map with VOSviewer

Navigate to the vos4.csv, vos6.csv and vos19.csv files and select one and click Ok.

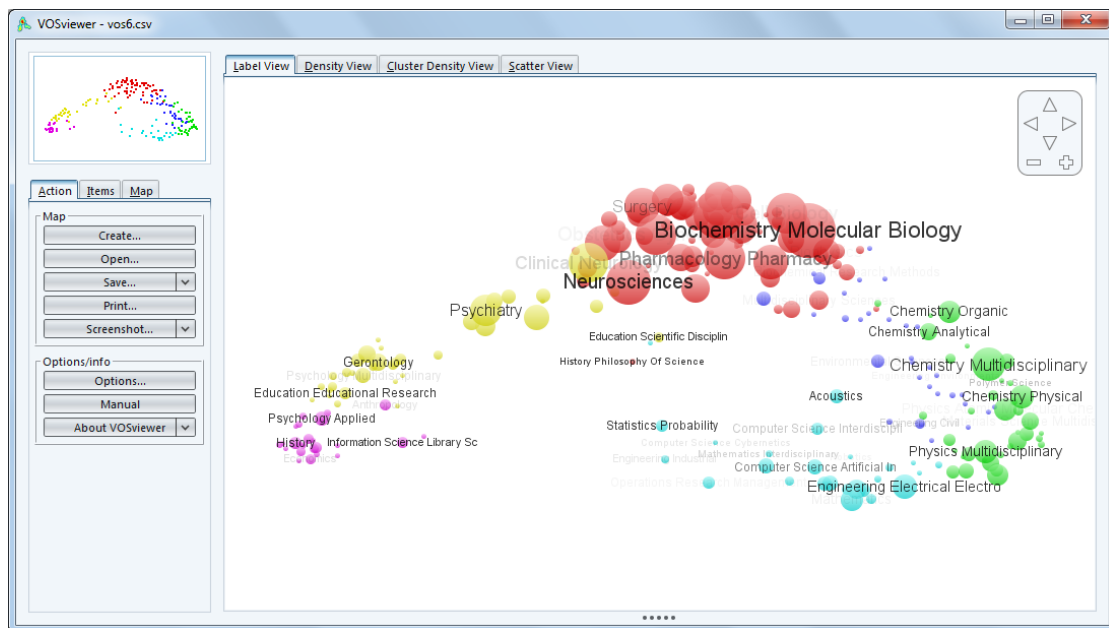
Note: Change the "Files of Type" to "*.csv" to see these files in the window.



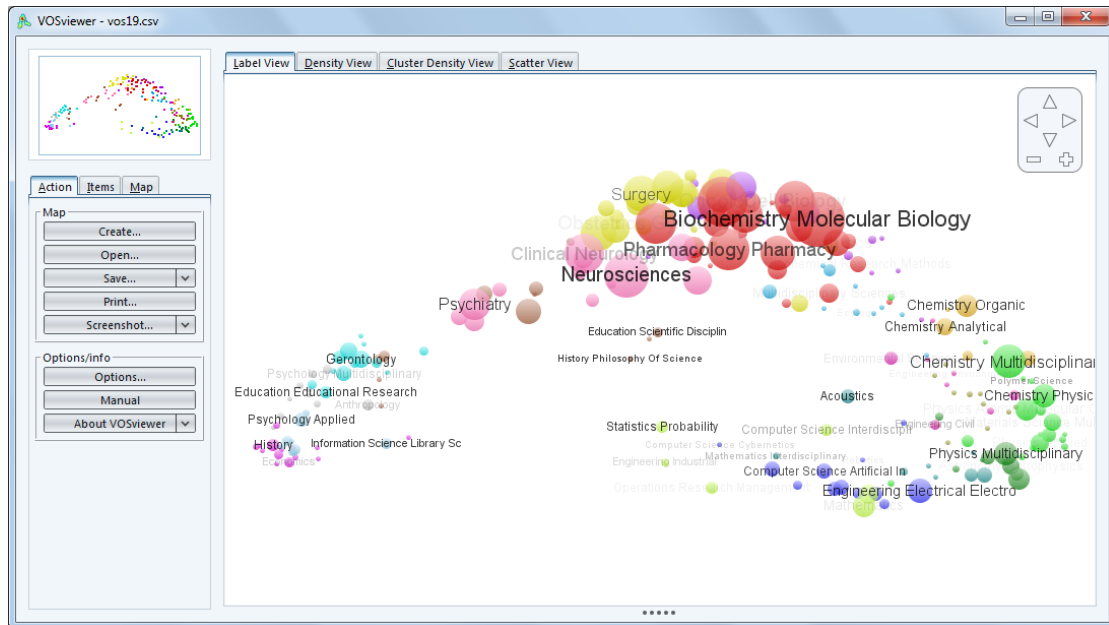
A map is displayed. This the vos4.csv file.



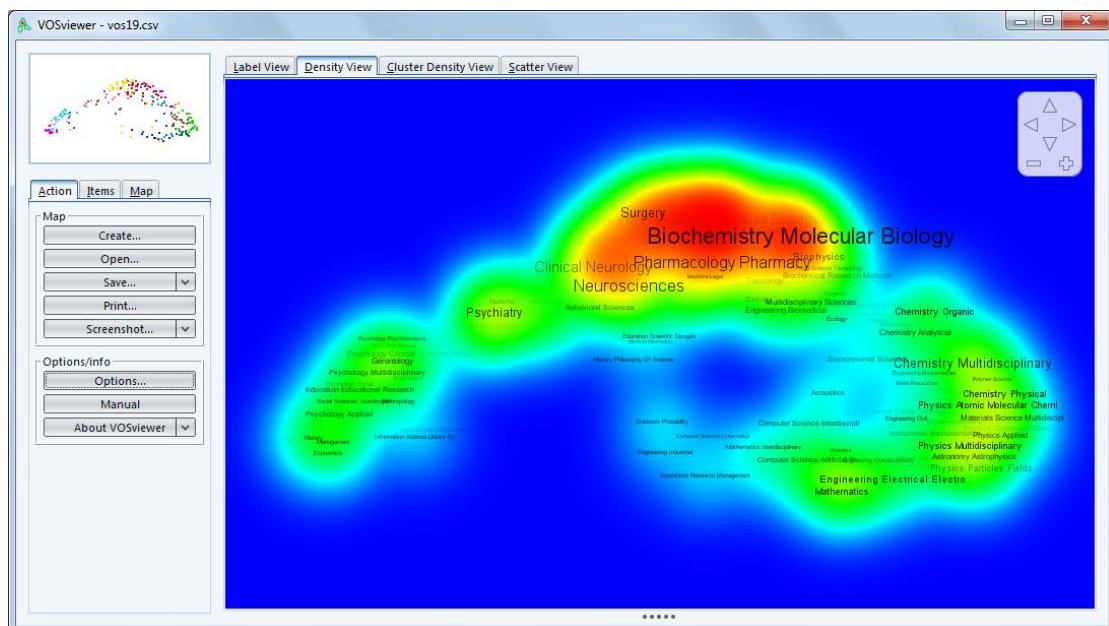
This is the vos6.csv file.



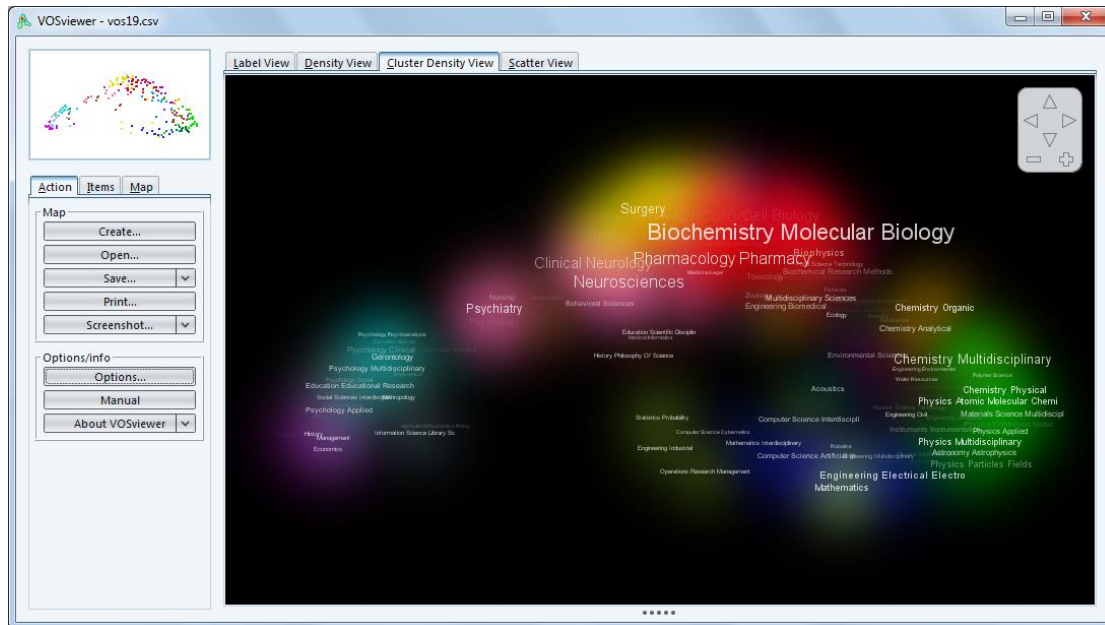
This is the vos19.csv file



**Click on the Density or Cluster Density View to Change the visualization.
Here is the Density view.**



Here is the Cluster Density View.



See VOSviewer manual for more details.

[http://www.vosviewer.com/documentation/Manual VOSviewer 1.5.5.pdf](http://www.vosviewer.com/documentation/Manual%20VOSviewer%201.5.5.pdf)

Part.4 Visualization with Gephi

Extension for GEPHI(Visualization with Gephi⁹)

Clement Levallois <CLevallois@rsm.nl> was so kind to make an excel file with a macro <gephi.xlsm> which allows for generating the corresponding input file for GEPHI (as an alternative to Pajek for the visualization). Save this file under the name gephi.xlsm by right clicking on the hyperlink.

Step1. Download the file excel Macro

<http://www.leydesdorff.net/overlaytoolkit/gephi.xlsm>

Step2. Open the Macro in Excel

⁹ Gephi is freely available at <http://gephi.org/>

What does this script do?

It creates a file exportable to GEPHI, for the same use as the Pajek files developed here:
<http://www.leydesdorff.net/overlaytoolkit/>

1. Copy paste the whole ISI analysis report in the worksheet "copy SC report form ISI here" (or any list where SCs are in column A, counts in column B. Column C (%) is actually not necessary).
2. Run the macro => Run
3. The result is a text file appearing in column A of the worksheet "Results". Copy it into a text editor and save it with a gexf extension (example.gexf)
4. It is ready to be imported in GEPHI

Comments, requests can be sent to Clement Levallois
www.clementlevallois.net
 This is an adaptation for GEPHI of the method developed for PAJEK by
 Ismael Rafols, Alan L. Porter, and Loet Leydesdorff, "Science

Instructions | **copy SC report form ISI here** | Result

Step3. Open the data "analyze.txt" with Excel

	A	B	C
170	MICROSCOPY	72	0.106
171	GEOSCIENCES MULTIDISCIPLINARY	71	0.105
172	PSYCHOLOGY EDUCATIONAL	69	0.102
173	CRYSTALLOGRAPHY	67	0.099
174	PHYSICS FLUIDS PLASMAS	66	0.097
175	COMPUTER SCIENCE CYBERNETICS	64	0.094
176	ENGINEERING ENVIRONMENTAL	61	0.09
177	MARINE FRESHWATER BIOLOGY	61	0.09
178	TRANSPORTATION	61	0.09
179	CHEMISTRY APPLIED	60	0.089
180	MEDICAL INFORMATICS	58	0.086
181	PHILOSOPHY	55	0.081
182	ENVIRONMENTAL STUDIES	54	0.08
183	BUSINESS FINANCE	52	0.077
184	SOCIAL ISSUES	50	0.074
185	SUBSTANCE ABUSE SSCI	46	0.068
186	EDUCATION SPECIAL	45	0.066
187	THERMODYNAMICS	45	0.066
188	HISTORY PHILOSOPHY OF SCIENCE SCI	43	0.063
189	HISTORY PHILOSOPHY OF SCIENCE SSCI	42	0.062
190	AREA STUDIES	41	0.061
191	MEDICINE LEGAL	41	0.061
192	ENGINEERING AEROSPACE	40	0.059
193	ETHNIC STUDIES	40	0.059
194	METEOROLOGY ATMOSPHERIC SCIENCES	40	0.059
195	CONSTRUCTION BUILDING TECHNOLOGY	39	0.058

analyze

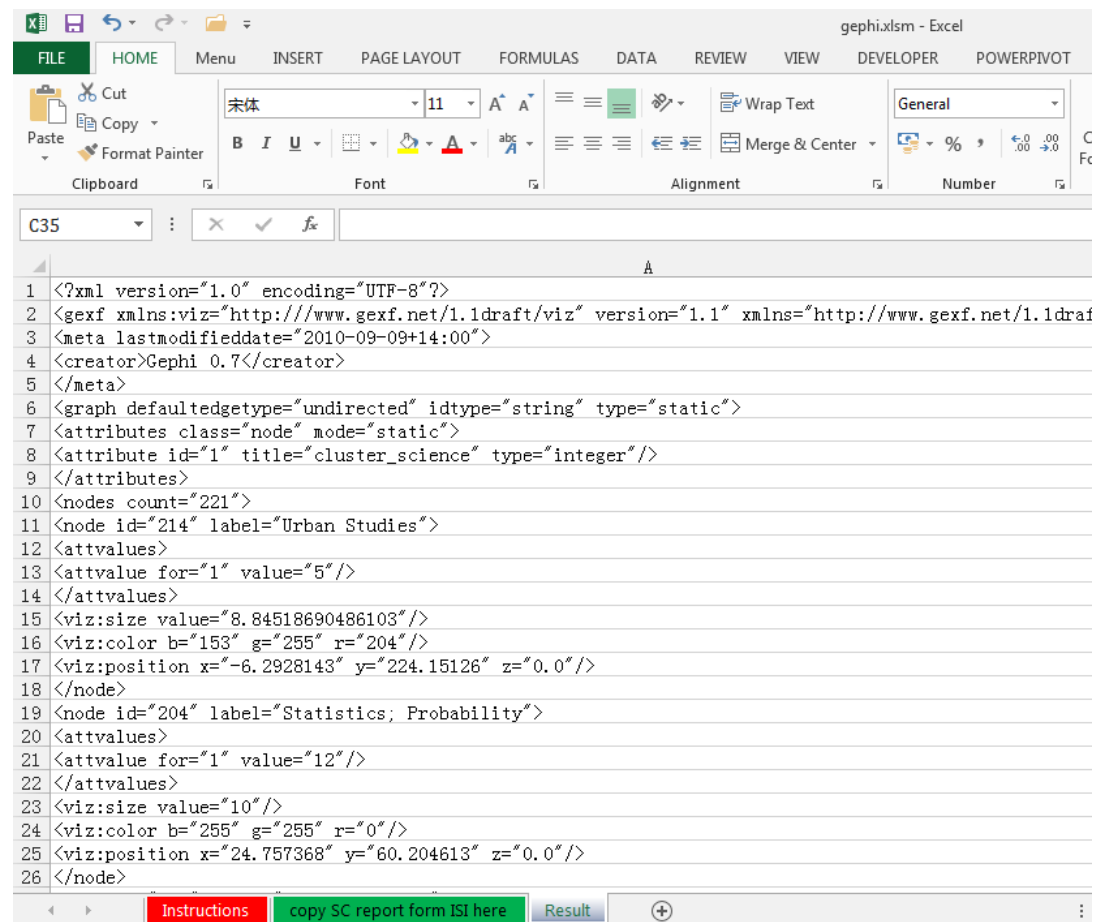
Step4. Copy the data "analyze.txt" to "copy SC report form ISI here"

gephi.xlsm - Excel					
FILE HOME Menu INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW DEVELOPER POWERPivot					
<div> <div>Cut Copy Paste Format Painter</div> <div>Clipboard</div> <div>宋体 11 A⁺ A⁻ B I U</div> <div>Font</div> <div>Wrap Text Merge & Center</div> <div>Alignment</div> <div>General</div> <div>Number</div> </div>					
A256 : X ✓ fx ARCHITECTURE					
	A	B	C	D	E
1	Web of Science Categories	records	% of 67736		
2	BIOCHEMISTRY MOLECULAR BIOLOGY	5392	796.00%		
3	ONCOLOGY	4549	671.60%		
4	NEUROSCIENCES	3682	543.60%		
5	PHARMACOLOGY PHARMACY	3218	475.10%		
6	CELL BIOLOGY	3008	444.10%		
7	OBSTETRICS GYNECOLOGY	2967	438.00%		
8	CLINICAL NEUROLOGY	2824	416.90%		
9	MEDICINE RESEARCH EXPERIMENTAL	2368	349.60%		
10	PEDIATRICS	2360	348.40%		
11	SURGERY	2313	341.50%		
12	BIOLOGY	2125	313.70%		
13	CHEMISTRY MULTIDISCIPLINARY	2090	308.60%		
14	PSYCHIATRY	1802	266.00%		
15	CARDIAC CARDIOVASCULAR SYSTEMS	1769	261.20%		
16	IMMUNOLOGY	1725	254.70%		
17	PATHOLOGY	1714	253.00%		
18	PERIPHERAL VASCULAR DISEASE	1501	221.60%		
19	HEMATOLOGY	1486	219.40%		
20	MEDICINE GENERAL INTERNAL	1480	218.50%		
21	RADIOLOGY NUCLEAR MEDICINE MEDICAL IMAGING	1464	216.10%		
22	OPHTHALMOLOGY	1423	210.10%		
23	GENETICS HEREDITY	1324	195.50%		
24	BIOPHYSICS	1290	190.40%		
25	PUBLIC ENVIRONMENTAL OCCUPATIONAL HEALTH	1228	181.30%		
26	ENDOCRINOLOGY METABOLISM	1185	174.90%		
<div>Instructions copy SC report form ISI here Result</div>					

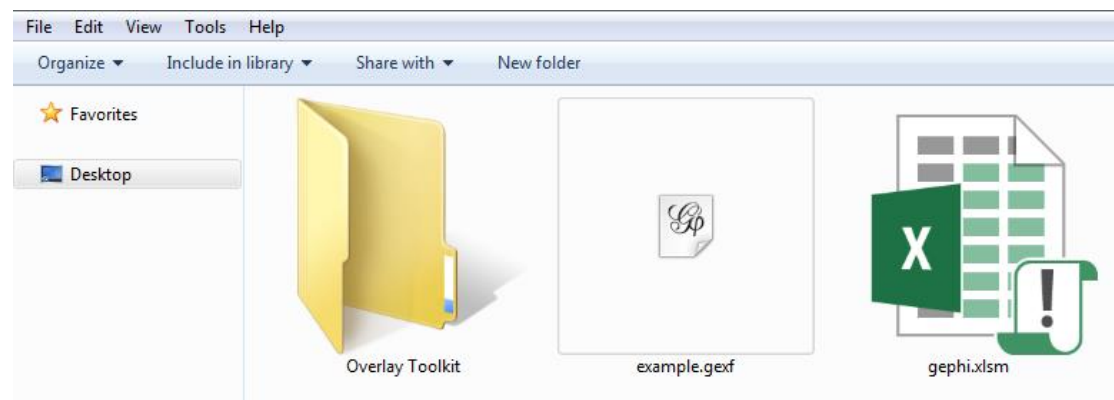
Step5. Click "Run" in the "Instructions"

gephi.xlsm - Excel					
FILE HOME Menu INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW DEVELOPER POWERPivot					
<div> <div>Cut Copy Paste Format Painter</div> <div>Clipboard</div> <div>宋体 11 A⁺ A⁻ B I U</div> <div>Font</div> <div>Wrap Text Merge & Center</div> <div>Alignment</div> <div>Number</div> </div>					
D11 : X ✓ fx 3. The result is a text file appearing in column A of the worksheet "Results". Copy it into a text					
	B	C	D	E	
1			What does this script do?		
2			It creates a file exportable to GEPHI, for the same use as the Pajek files developed here:		
3			http://www.leydesdorff.net/overlaytoolkit/		
4					
5			1. Copy paste the whole ISI analysis report in the worksheet "copy SC report from ISI here"		
6			(or any list where SCs are in column A, counts in column B. Column C (%) is actually not necessary.		
7					
8			2. Run the macro =>	Run	
9					
10					
11			3. The result is a text file appearing in column A of the worksheet "Results". Copy it into a text editor and save it with a gexf extension (example.gexf)		
12					
13			4. It is ready to be imported in GEPHI		
14					
15			Comments, requests can be sent to Clement Levallois		
16			www.clementlevallois.net		
17			This is an adaptation for GEPHI of the method developed for PAJEK by Ismael Rafols, Alan L. Porter, and Loet Leydesdorff, "Science		
<div>Instructions copy SC report form ISI here Result</div>					

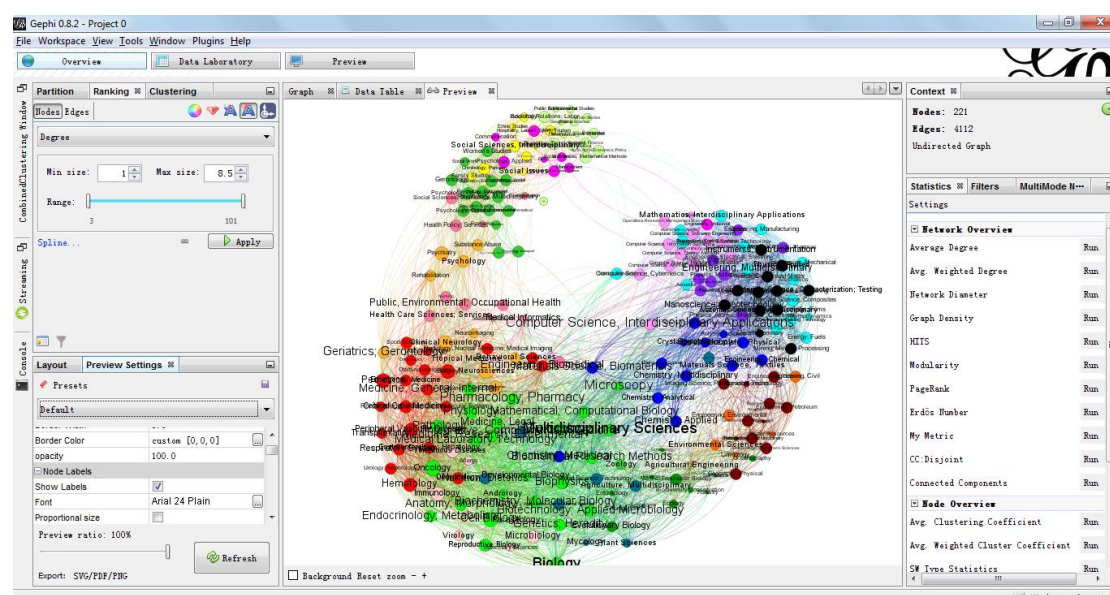
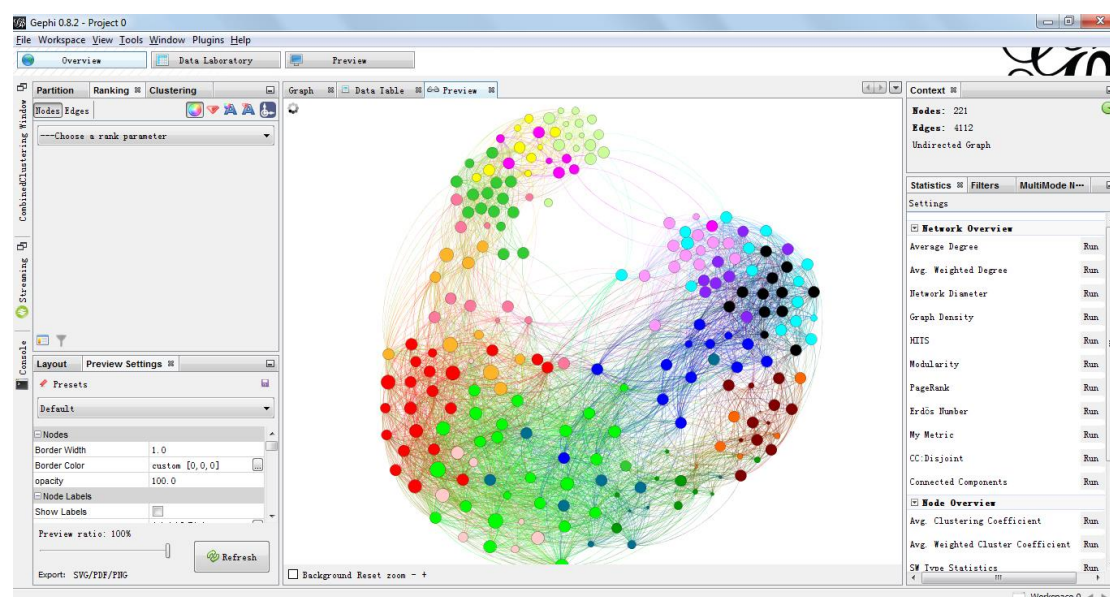
Step6. Get the results from “Result”



Step7. Copy the results to the new ".txt" file, and change the file name to ".gexf"



Step8. Open the ".gexf" file.



Part.5 Visualization with IDR map of science

Step1. Download the instruction

How to prepare the file for uploading in the IDR map of science

http://idr.gatech.edu/doc/IDR_upload_instruction.pdf

Step2. Upload your data

<http://www.idr.gatech.edu/upload.php>

Part.6 Open Access data in this instruction

The related data and software in this instruction are shared below:

<https://drive.google.com/folderview?id=0B0HnDMi5NBF8a0lhb1lVT3NjUU0&usp=sharing>

Note: More information visit to

<http://www.leydesdorff.net/overlaytoolkit/index.htm>