Interactive Maps of S&T

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With special thanks to the members at the Cyberinfrastructure for Network Science Center and the Mapping Science exhibit advisory board.

International Symposium on Science of Science and Innovation Policy "Toward Synergetic Collaborations and Realization of Innovation"
The University of Tokyo, Tokyo, Japan

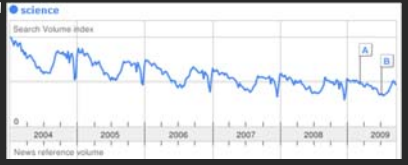
December 13, 2012

Take terra bytes of data

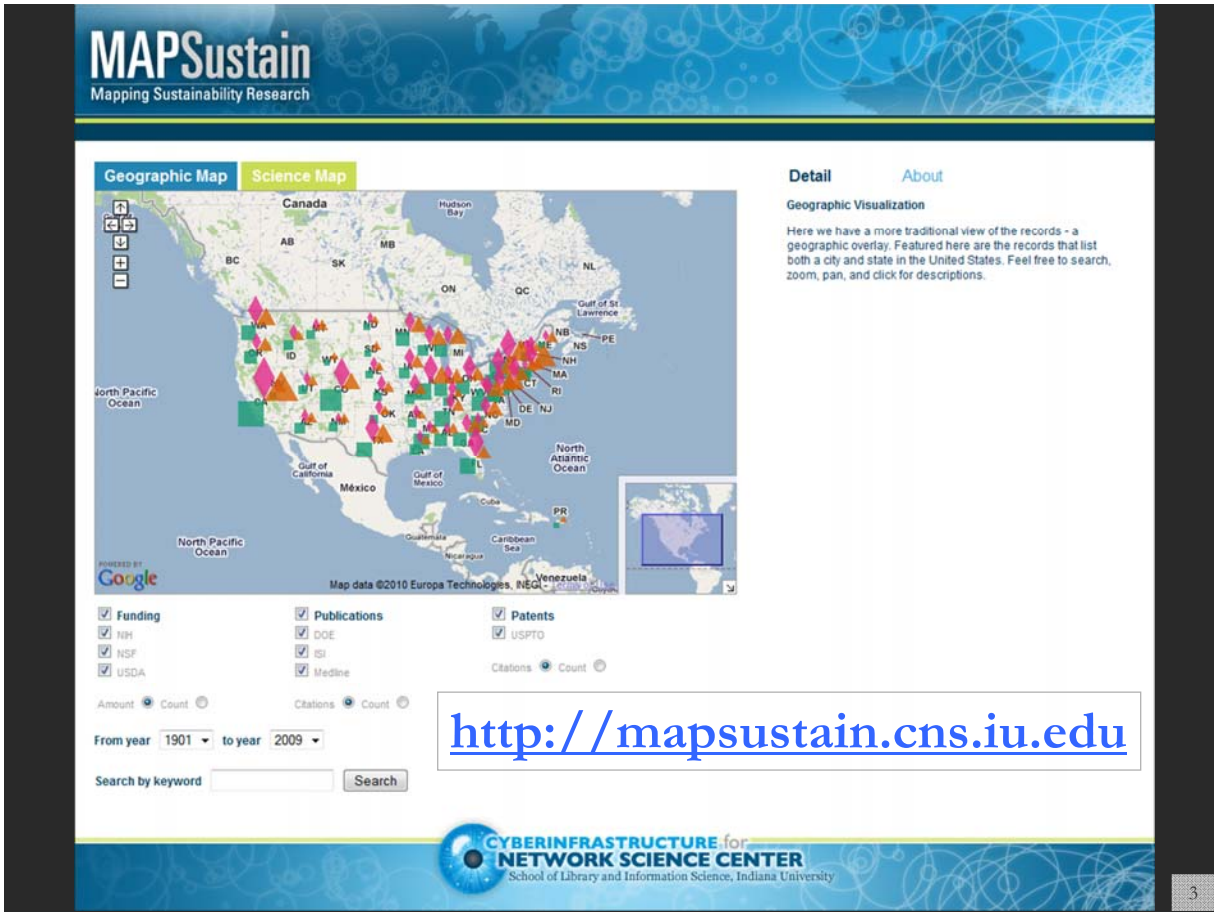
Black Box

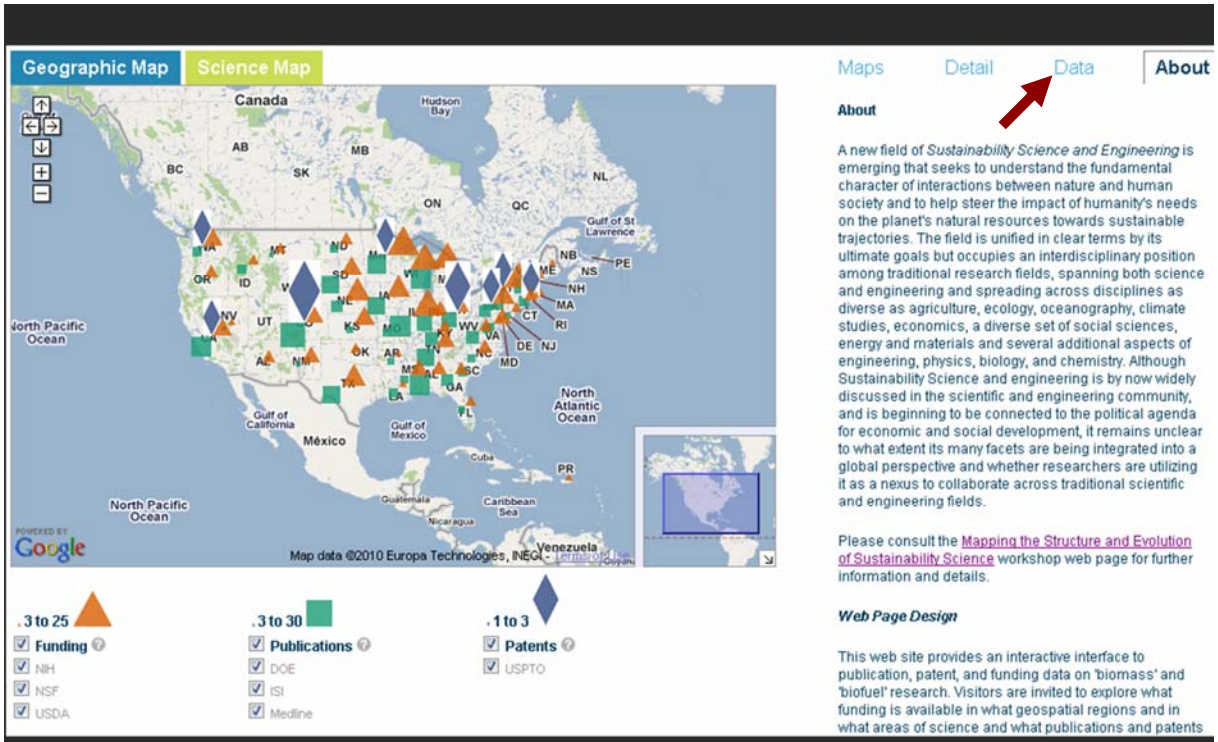
Find your way

Find collaborators, friends

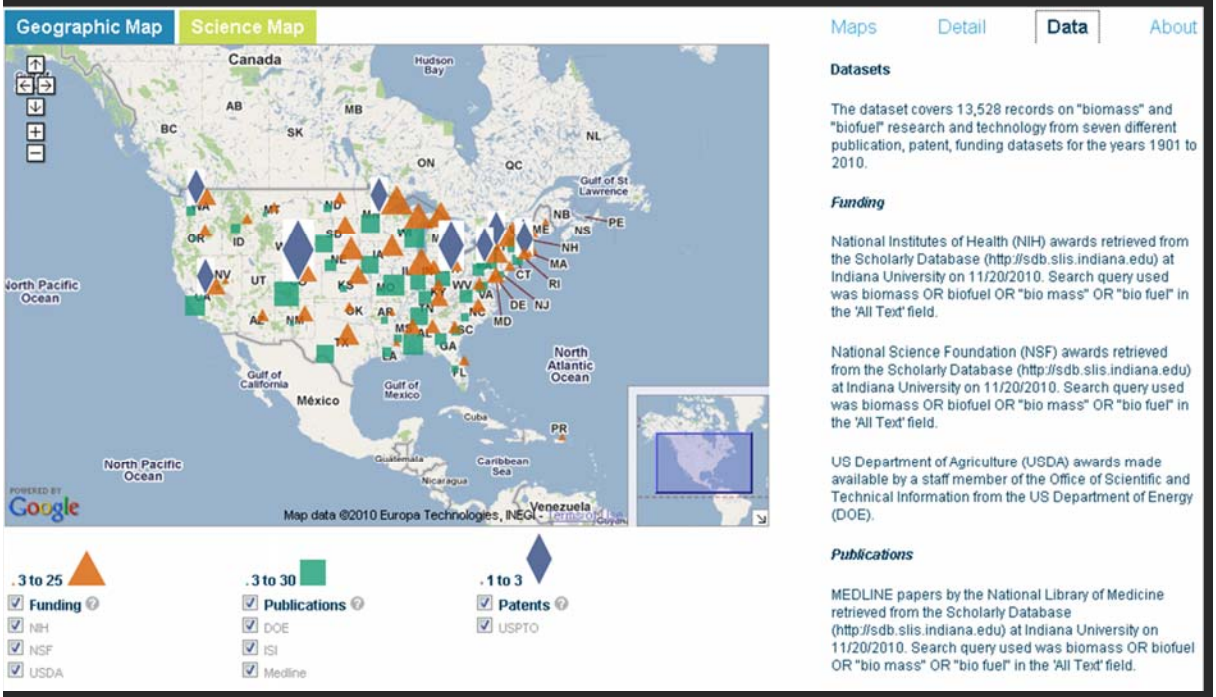


Identify trends

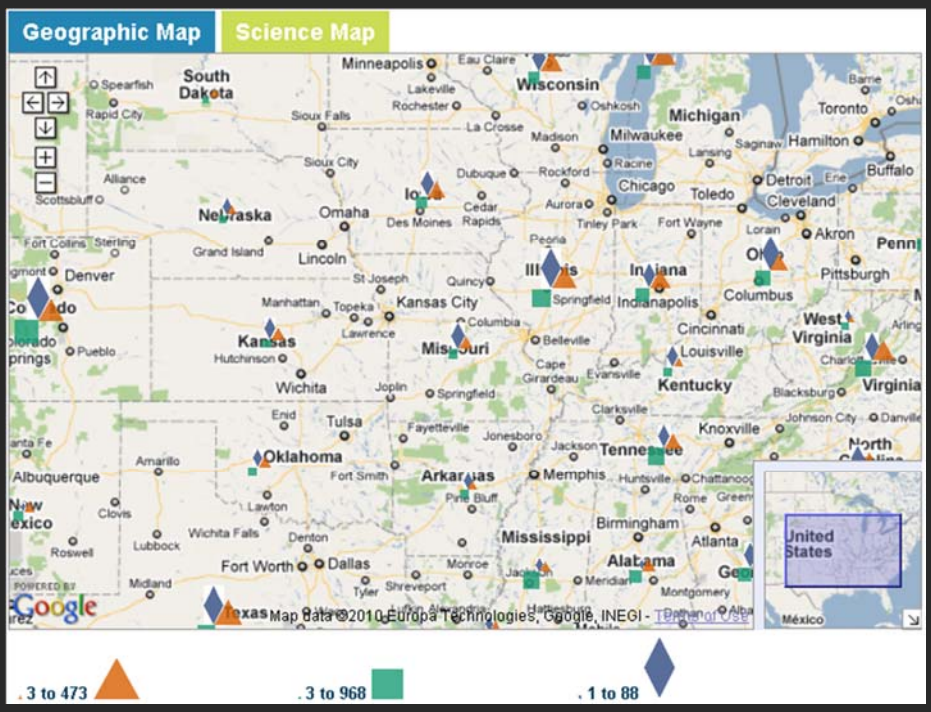




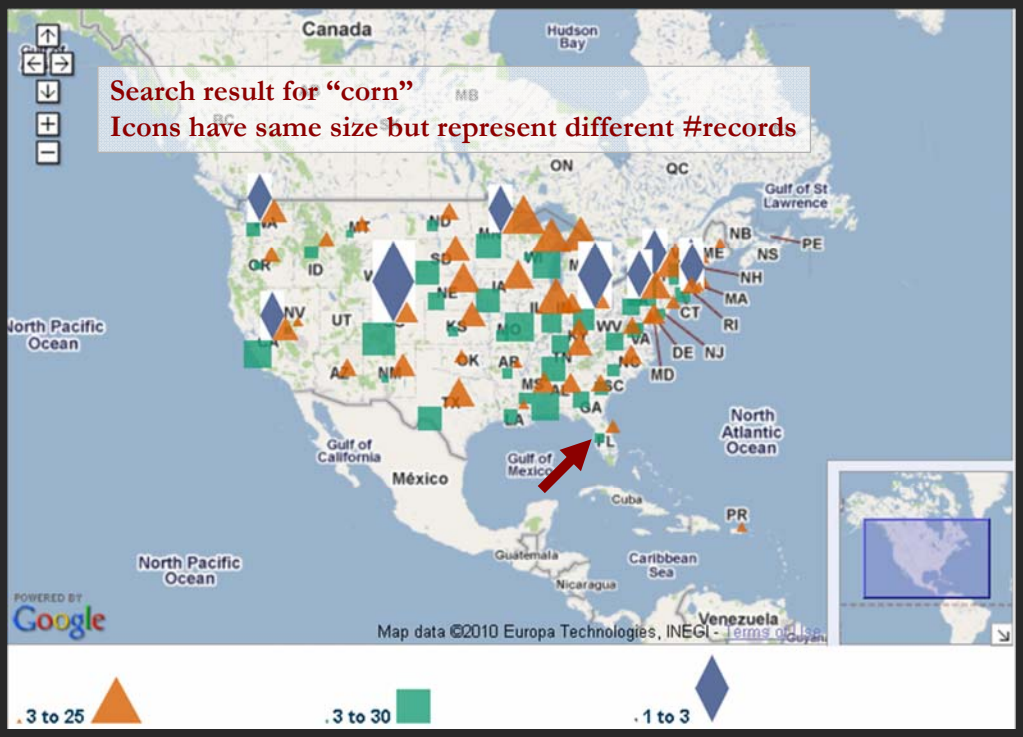
Google Map JavaScript API was used to implement both maps with two aggregation layers for each. The geographic map aggregates to the **state level** and the **city level**. The science map has a high level of aggregation of 13 top-level scientific **disciplines** and a low level of 554 **sub-disciplines**.

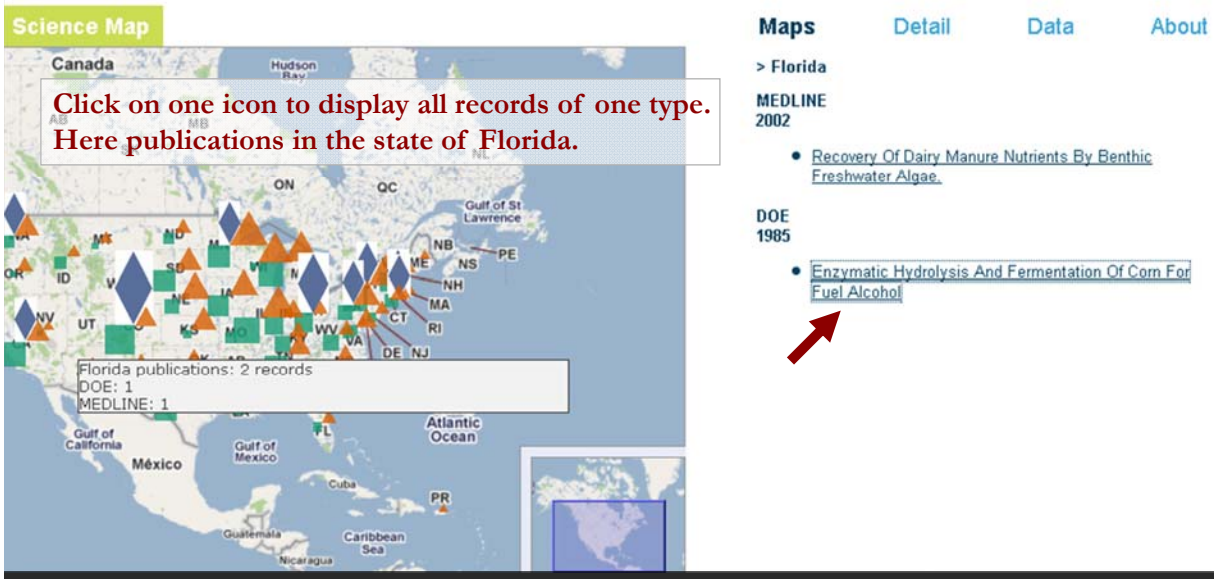


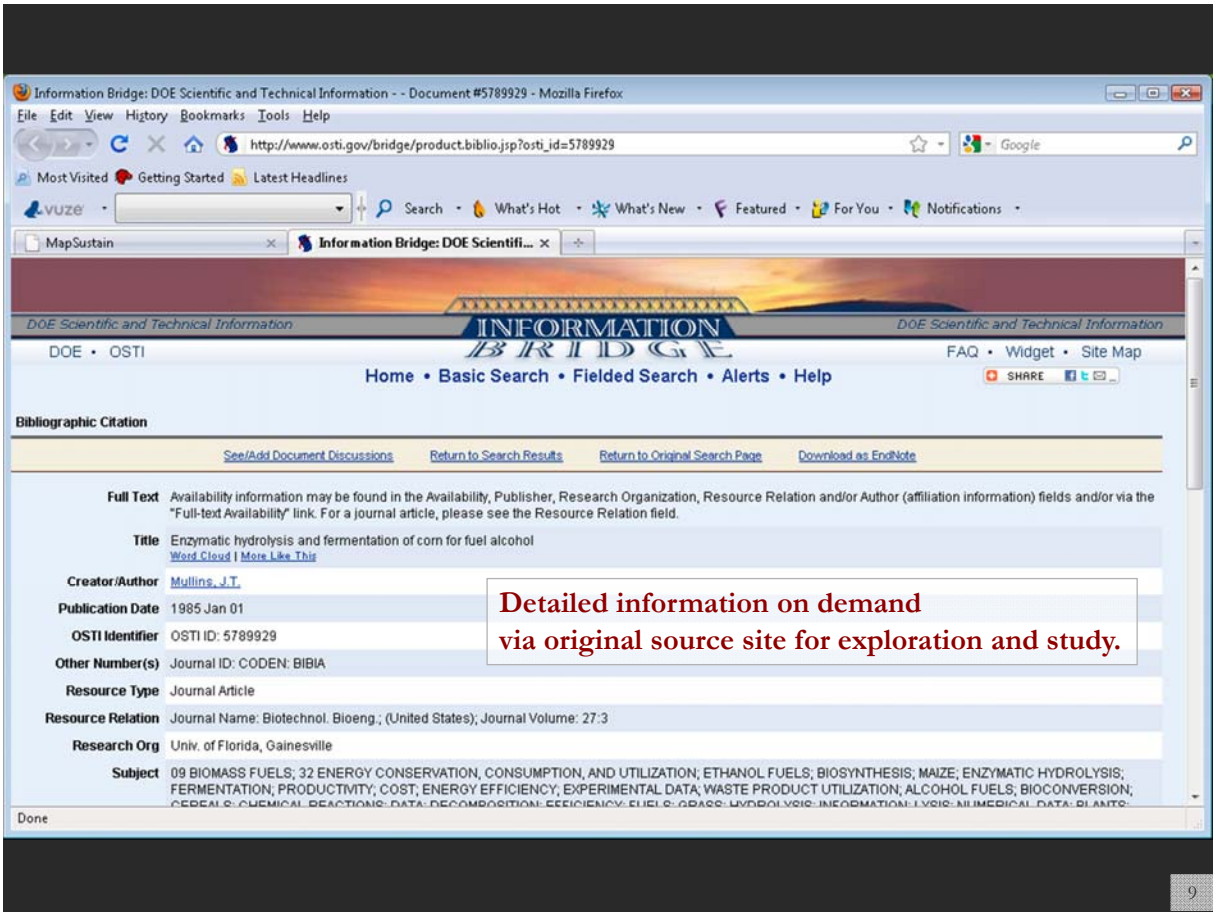
The geographic map at **state level**.



The geographic map at **city level**.


Search result for "corn"
Icons have same size but represent different #records
Canada
Hudson Bay
North Pacific Ocean
México
Gulf of California
Gulf of Mexico
North Atlantic Ocean
Cuba
PR
Caribbean Sea
Guatemala
Nicaragua
Venezuela
Map data ©2010 Europa Technologies, INEGI
.3 to 25
.3 to 30
.1 to 3


Science Map
Maps
Detail
Data
About
> Florida
Click on one icon to display all records of one type.
Here publications in the state of Florida.
Florida publications: 2 records
DOE: 1
MEDLINE: 1
MEDLINE
2002
Recovery Of Dairy Manure Nutrients By Benthic Freshwater Algae.
DOE
1985
Enzymatic Hydrolysis And Fermentation Of Corn For Fuel Alcohol


Information Bridge: DOE Scientific and Technical Information - - Document #5789929 - Mozilla Firefox
http://www.osti.gov/bridge/product.biblio.jsp?osti_id=5789929
DOE Scientific and Technical Information
INFORMATION BRIDGE
DOE • OSTI
FAQ • Widget • Site Map
Home • Basic Search • Fielded Search • Alerts • Help
Bibliographic Citation
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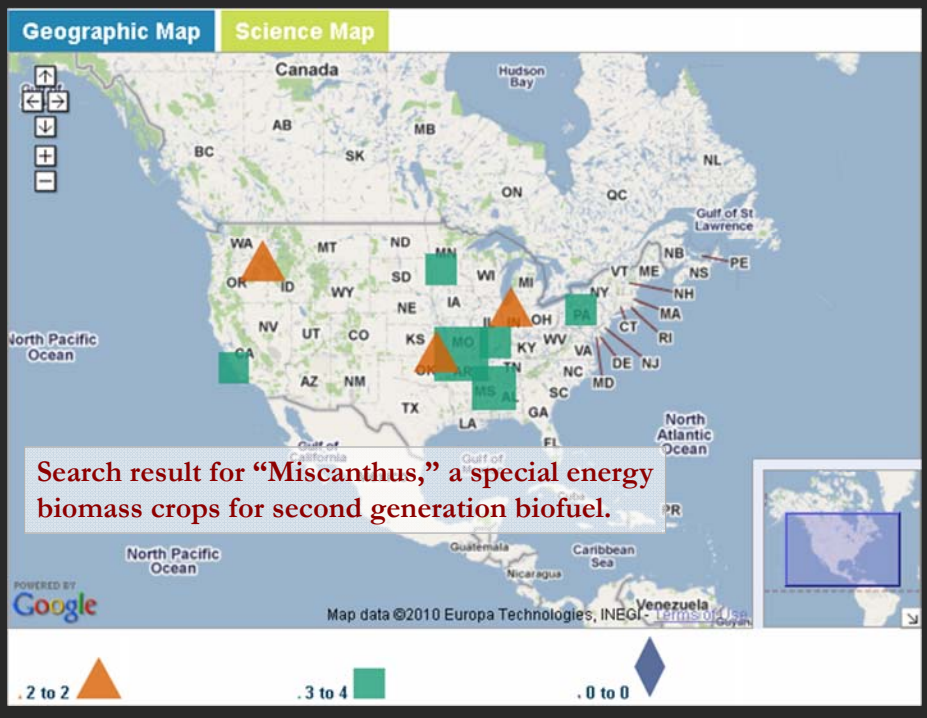
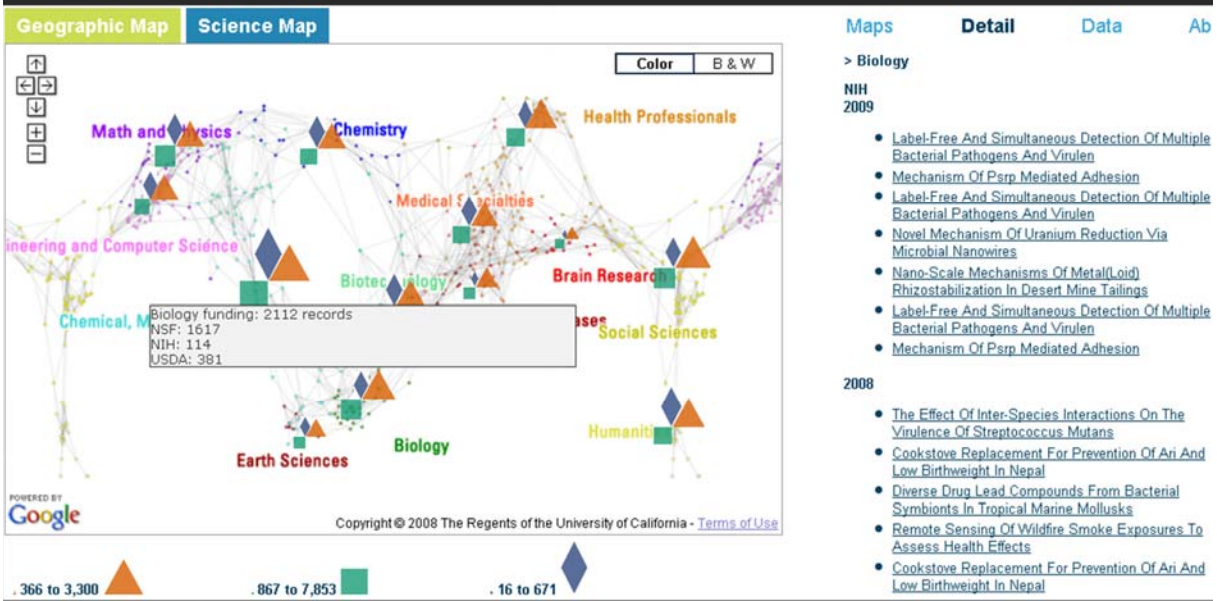
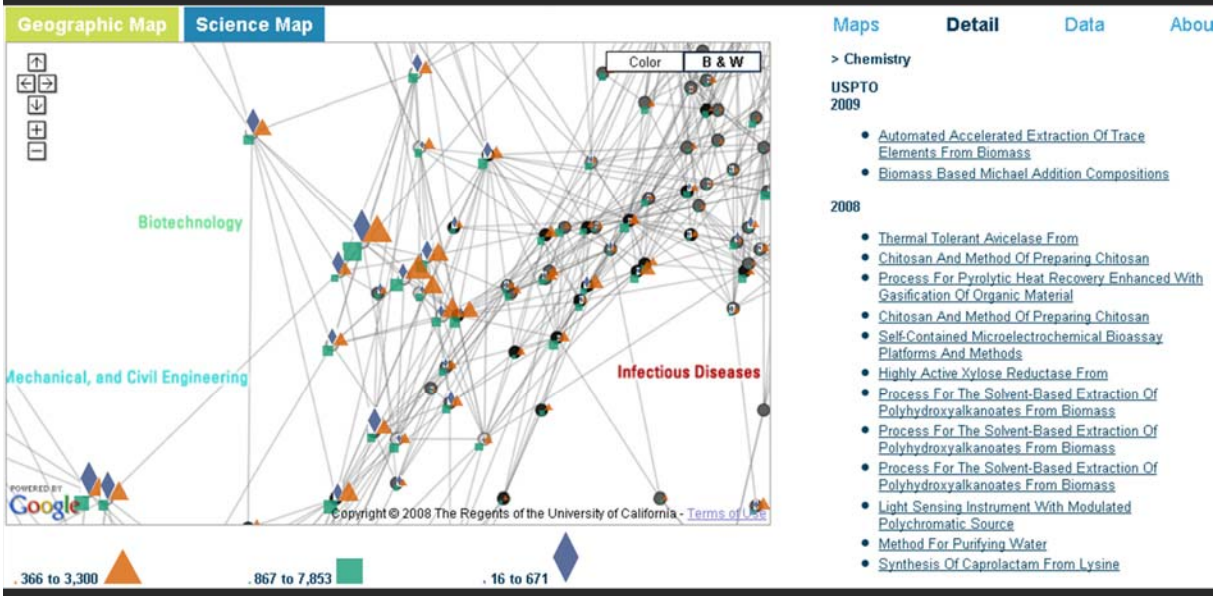
Download as EndNote
Full Text
Availability information may be found in the Availability, Publisher, Research Organization, Resource Relation and/or Author (affiliation information) fields and/or via the "Full-text Availability" link. For a journal article, please see the Resource Relation field.
Title
Enzymatic hydrolysis and fermentation of corn for fuel alcohol
Word Cloud | More Like This
Creator/Author
Mullins, J.T.
Publication Date
1985 Jan 01
OSTI Identifier
OSTI ID: 5789929
Other Number(s)
Journal ID: CODEN: BIBIA
Resource Type
Journal Article
Resource Relation
Journal Name: Biotechnol. Bioeng.; (United States); Journal Volume: 27:3
Research Org
Univ. of Florida, Gainesville
Subject
09 BIOMASS FUELS; 32 ENERGY CONSERVATION, CONSUMPTION, AND UTILIZATION; ETHANOL FUELS; BIOSYNTHESIS; MAIZE; ENZYMATIC HYDROLYSIS; FERMENTATION; PRODUCTIVITY; COST; ENERGY EFFICIENCY; EXPERIMENTAL DATA; WASTE PRODUCT UTILIZATION; ALCOHOL FUELS; BIOCONVERSION;
Done
Detailed information on demand
via original source site for exploration and study.

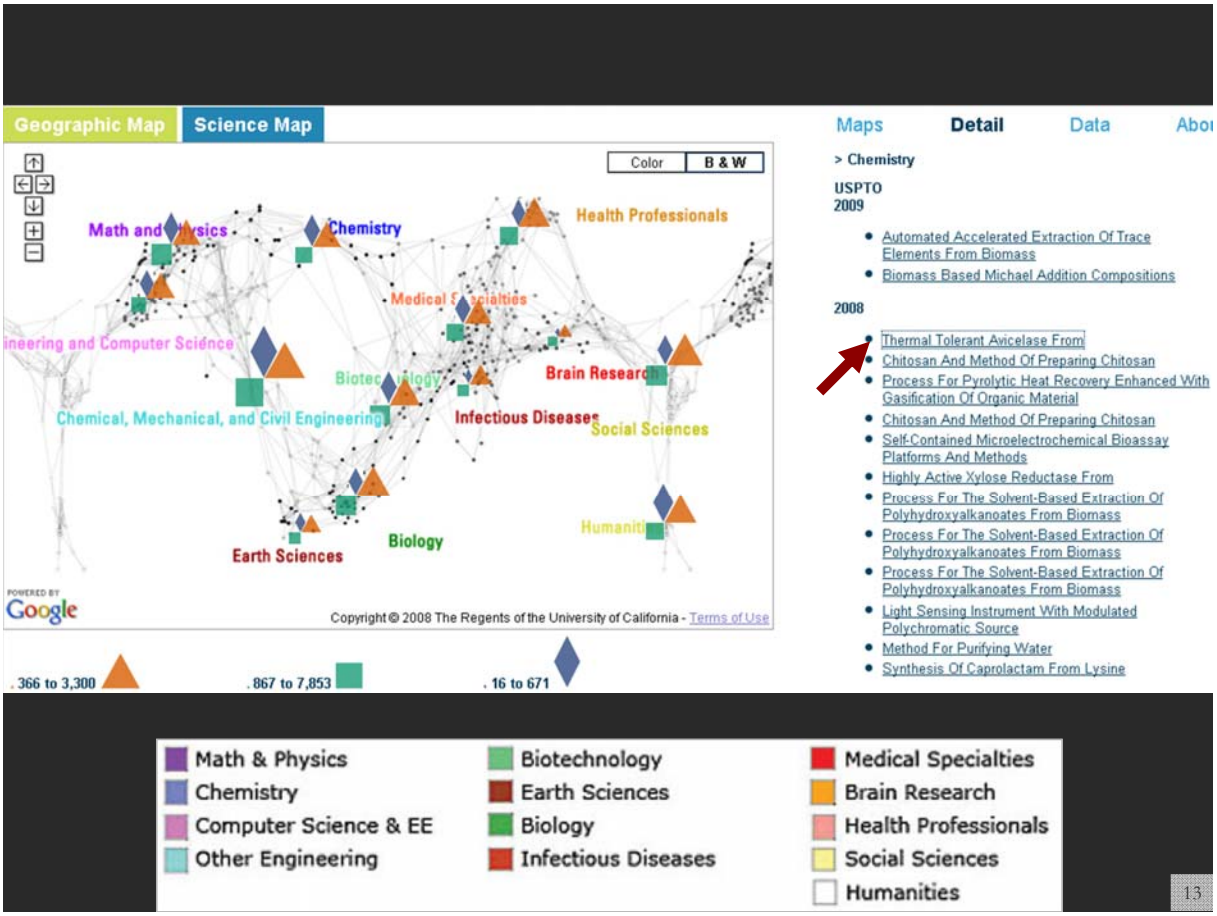

Geographic Map
Science Map
Canada
Hudson Bay
Gulf of St Lawrence
North Pacific Ocean
North Atlantic Ocean
Caribbean Sea
Guatemala
Nicaragua
Venezuela
Map data ©2010 Europa Technologies, INEGI
Search result for "Miscanthus," a special energy biomass crops for second generation biofuel.
.2 to 2
.3 to 4
.0 to 0

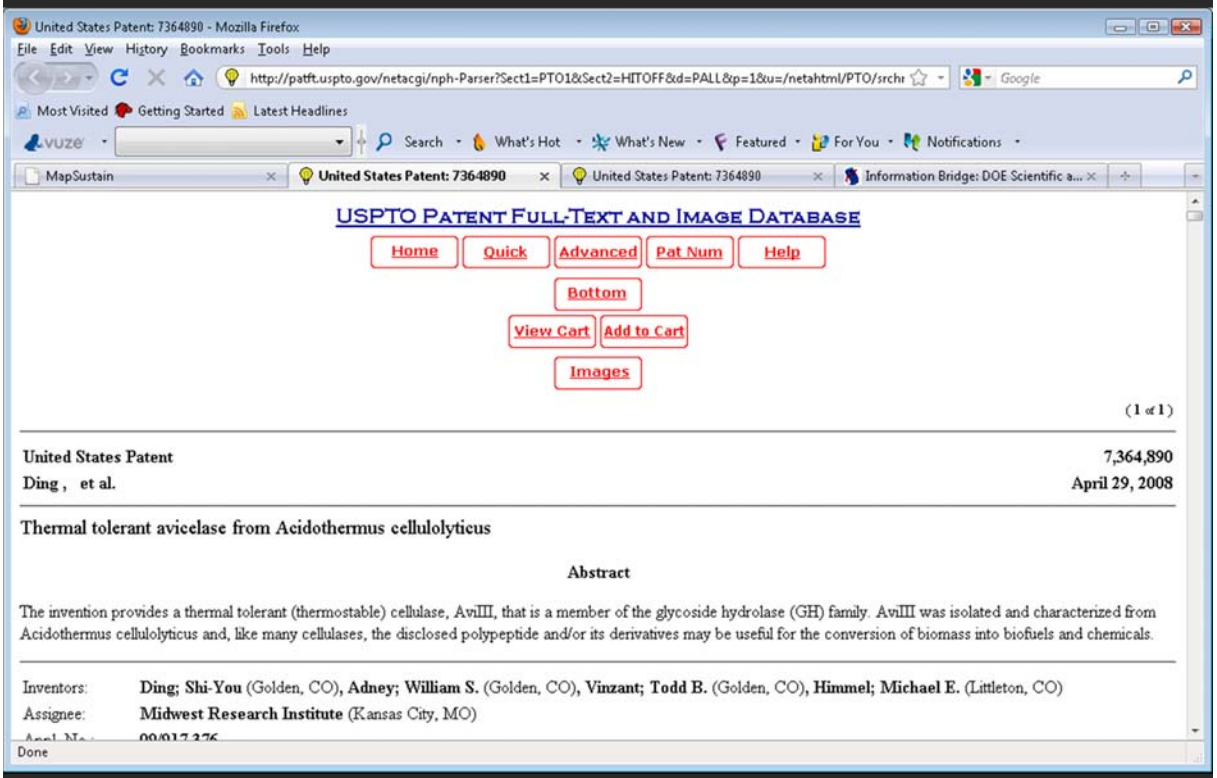


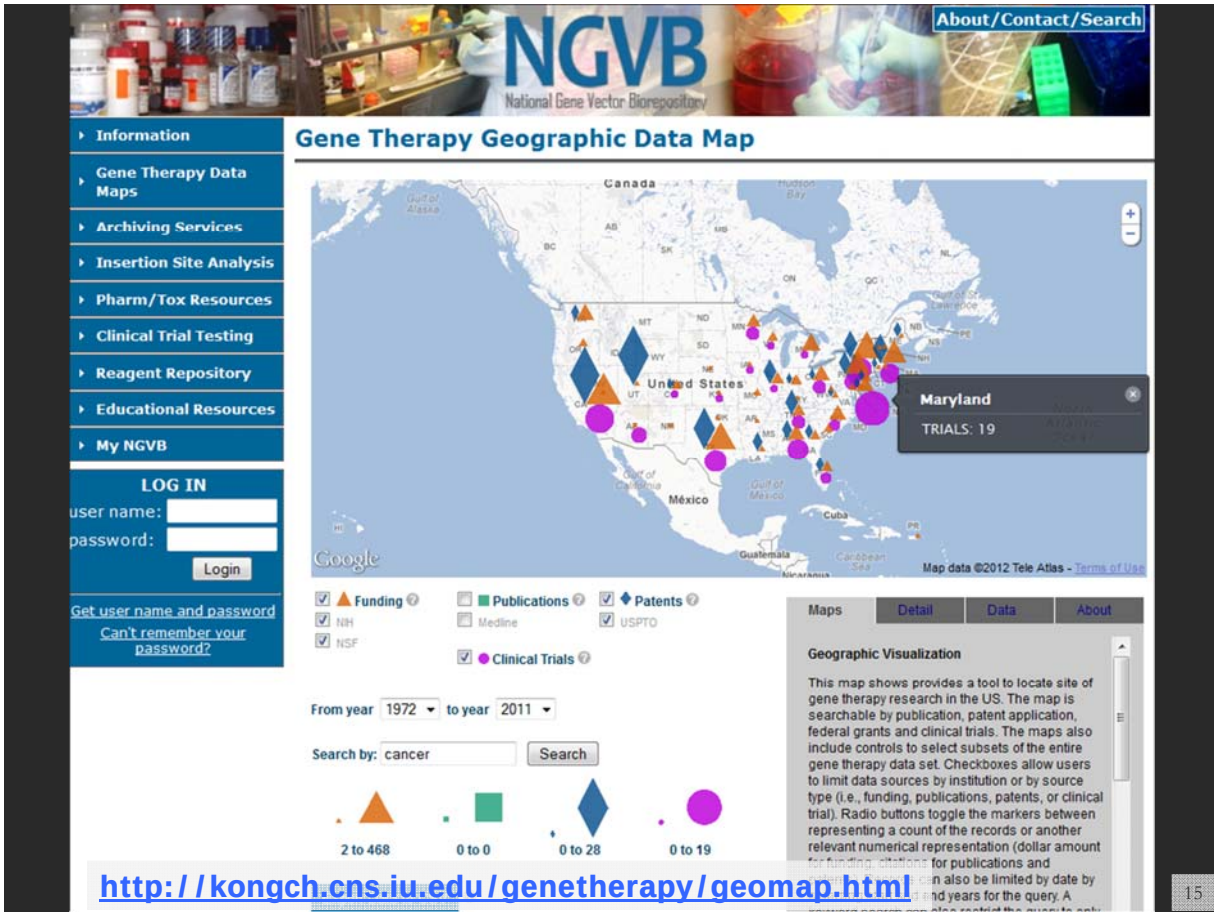
The science map at 13 top-level scientific **disciplines level**.



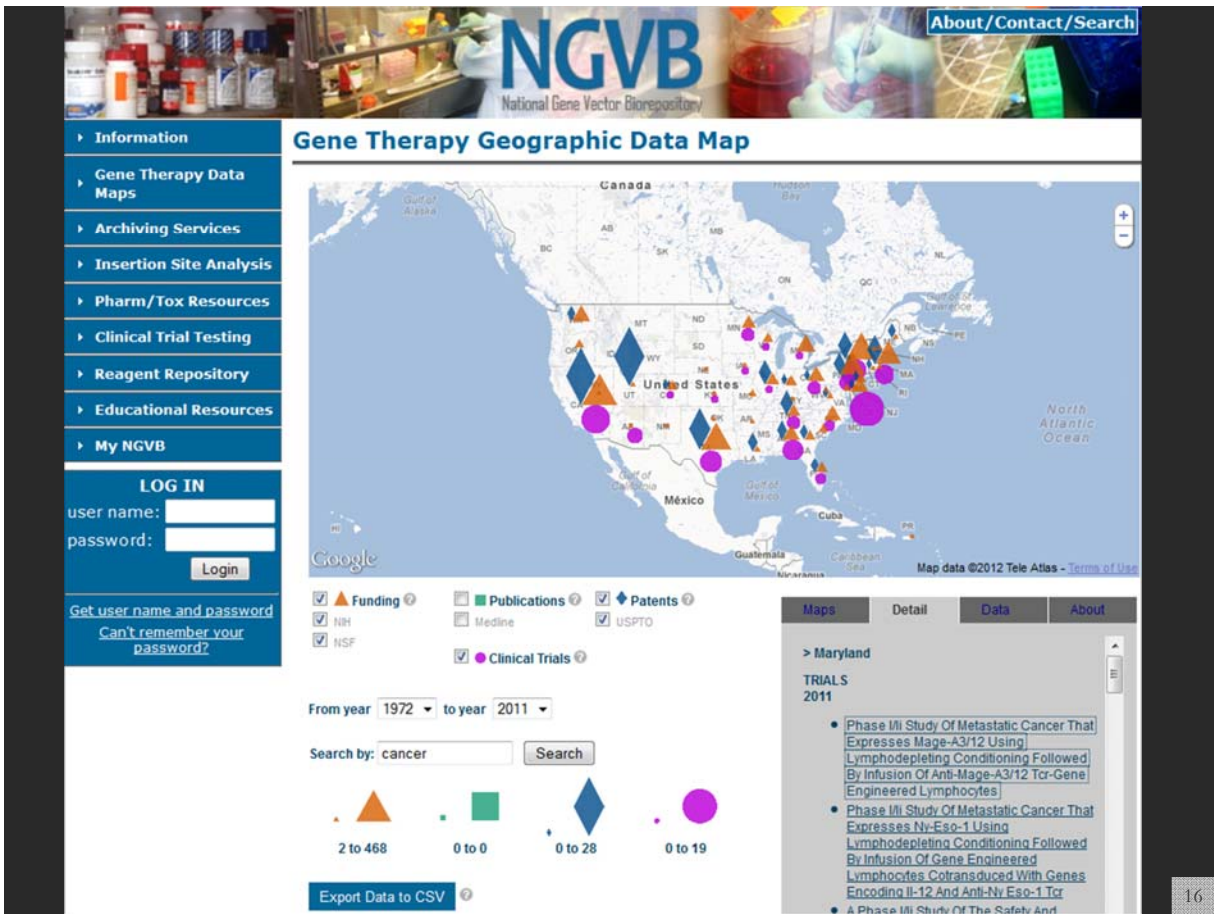
The science map at 554 **sub-disciplines level**.


Geographic Map
Science Map
Color
B & W
Math and Physics
Chemistry
Health Professionals
Medical Specialties
Engineering and Computer Science
Biotechnology
Brain Research
Chemical, Mechanical, and Civil Engineering
Infectious Diseases
Social Sciences
Earth Sciences
Biology
Humanities
Google
Copyright © 2008 The Regents of the University of California - Terms of Use
.366 to 3,300
.867 to 7,853
.16 to 671
Maps
Detail
Data
> Chemistry
USPTO
2009
Automated Accelerated Extraction Of Trace Elements From Biomass
Biomass Based Michael Addition Compositions
2008
Thermal Tolerant Avicelase From
Chitosan And Method Of Preparing Chitosan
Process For Pyrolytic Heat Recovery Enhanced With Gasification Of Organic Material
Chitosan And Method Of Preparing Chitosan
Self-Contained Microelectrochemical Bioassay Platforms And Methods
Highly Active Xylose Reductase From
Process For The Solvent-Based Extraction Of Polyhydroxyalkanoates From Biomass
Process For The Solvent-Based Extraction Of Polyhydroxyalkanoates From Biomass
Process For The Solvent-Based Extraction Of Polyhydroxyalkanoates From Biomass
Light Sensing Instrument With Modulated Polychromatic Source
Method For Purifying Water
Synthesis Of Caprolactam From Lysine
Math & Physics
Chemistry
Computer Science & EE
Other Engineering
Biotechnology
Earth Sciences
Biology
Infectious Diseases
Medical Specialties
Brain Research
Health Professionals
Social Sciences
Humanities


United States Patent: 7364890 - Mozilla Firefox
File Edit View History Bookmarks Tools Help
http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO1&Sect2=HITOFF&d=PALL&p=1&u=/netahtml/PTO/srchr
Most Visited Getting Started Latest Headlines
Search What's Hot What's New Featured For You Notifications
MapSustain
United States Patent: 7364890
United States Patent: 7364890
Information Bridge: DOE Scientific a...
USPTO PATENT FULL-TEXT AND IMAGE DATABASE
Home Quick Advanced Pat Num Help
Bottom
View Cart Add to Cart
Images
(1 of 1)
United States Patent
Ding , et al.
7,364,890
April 29, 2008
Thermal tolerant avicelase from Acidothermus cellulolyticus
Abstract
The invention provides a thermal tolerant (thermostable) cellulase, AviIII, that is a member of the glycoside hydrolase (GH) family. AviIII was isolated and characterized from Acidothermus cellulolyticus and, like many cellulases, the disclosed polypeptide and/or its derivatives may be useful for the conversion of biomass into biofuels and chemicals.
Inventors: Ding; Shi-You (Golden, CO), Adney; William S. (Golden, CO), Vinzant; Todd B. (Golden, CO), Himmel; Michael E. (Littleton, CO)
Assignee: Midwest Research Institute (Kansas City, MO)
Done



http://kongch.cns.iu.edu/genetherapy/geomap.html



ClinicalTrials.gov
A service of the U.S. National Institutes of Health

Home Search Study Topics Glossary
Search

Full Text View | Tabular View | No Study Results Posted | Related Studies

MAGE-A3/12 Metastatic Cancer Treatment With Anti-MAGE-A3/12 TCR-Gene Engineered Lymphocytes

This study has been suspended.

First Received on January 7, 2011. Last Updated on March 14, 2012 History of Changes

Sponsor:	National Cancer Institute (NCI)
Information provided by:	National Institutes of Health Clinical Center (CC)
ClinicalTrials.gov Identifier:	NCT01273181

Purpose

Background:

- MAGE-A3/12 is a type of protein commonly found on certain types of cancer cells, particularly in metastatic cancer. Researchers have developed a process to take lymphocytes (white blood cells) from cancer patients, modify them in the laboratory to target cancer cells that contain MAGE-A3/12, and return them to the patient to help attack and kill the cancer cells. These modified white blood cells are an experimental treatment, but researchers are interested in determining their safety and effectiveness as a possible treatment for cancers that involve MAGE-A3/12.

Objectives:

- To evaluate the safety and effectiveness of anti-MAGE-A3/12 lymphocytes as a treatment for metastatic cancers that have not responded to standard treatment.

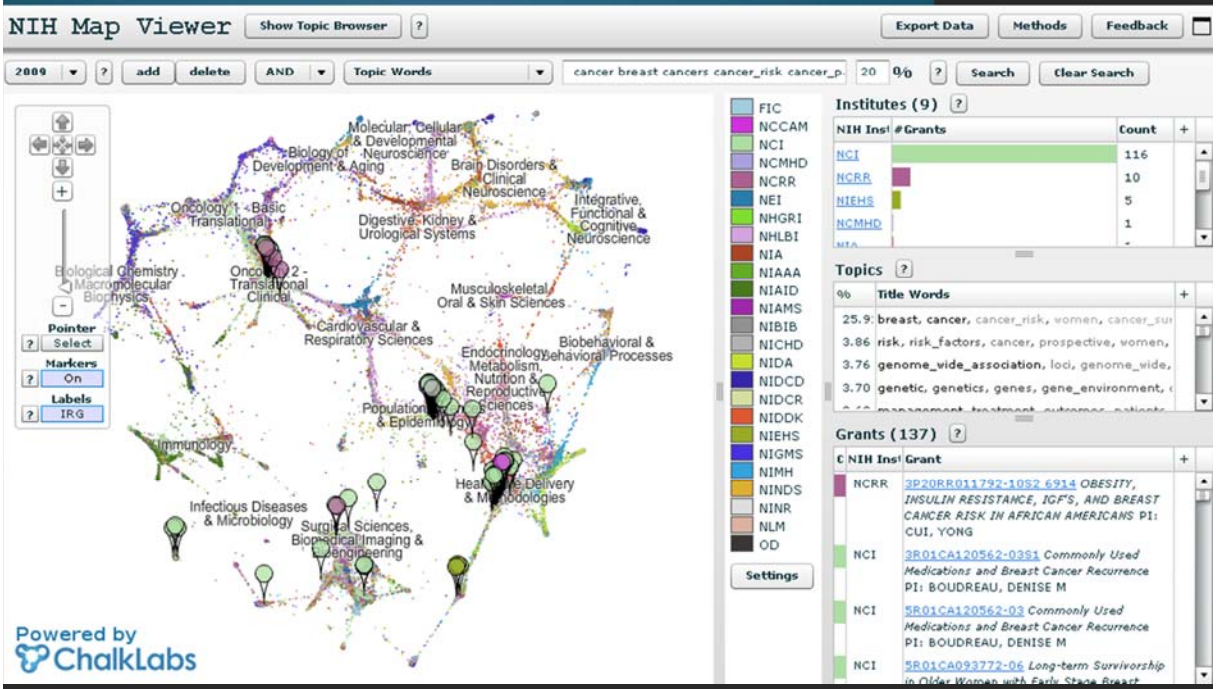
Eligibility:

- Individuals at least 18 years of age who have been diagnosed with metastatic melanoma, renal cell cancer, or another type of metastatic cancer that has not responded to standard treatment.

Design:

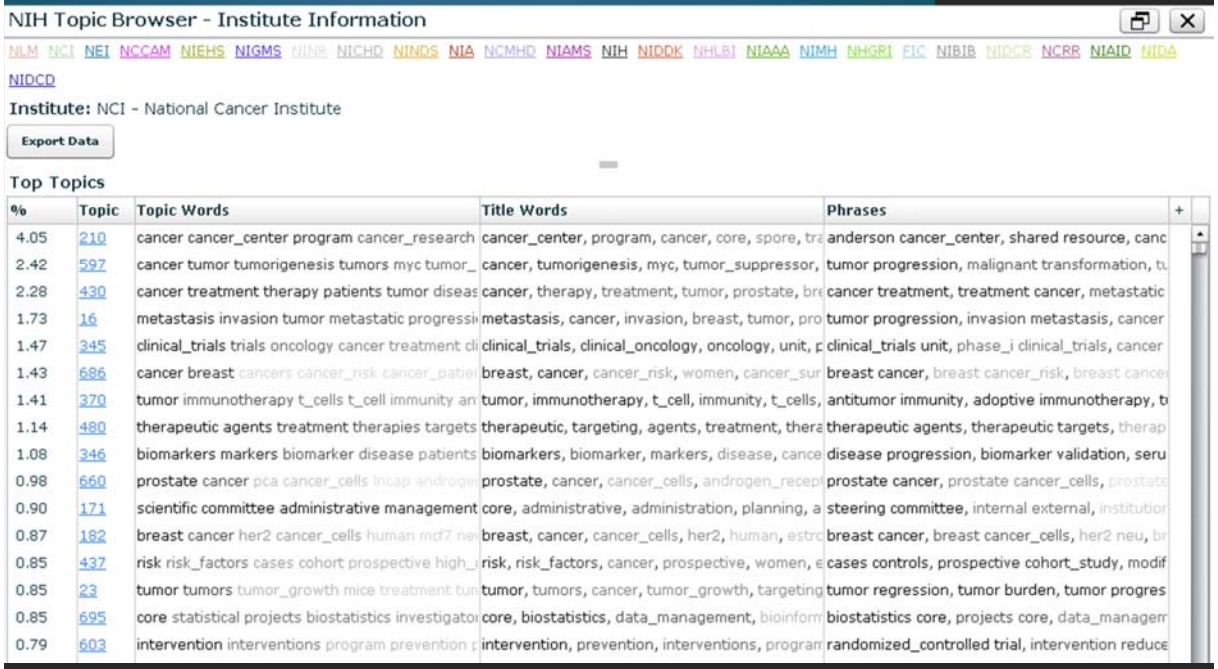
- Participants will be screened with a full medical history and physical examination, as well as blood and urine tests, tumor samples, and imaging studies.
- Participants will have leukapheresis to collect enough white blood cells for modification in the laboratory.
- Seven days before the start of anti-MAGE-A3/12 treatment, participants will have chemotherapy with cyclophosphamide and fludarabine to suppress the immune system in preparation for the treatment.

A Topic Database of NIH-Funded Grants



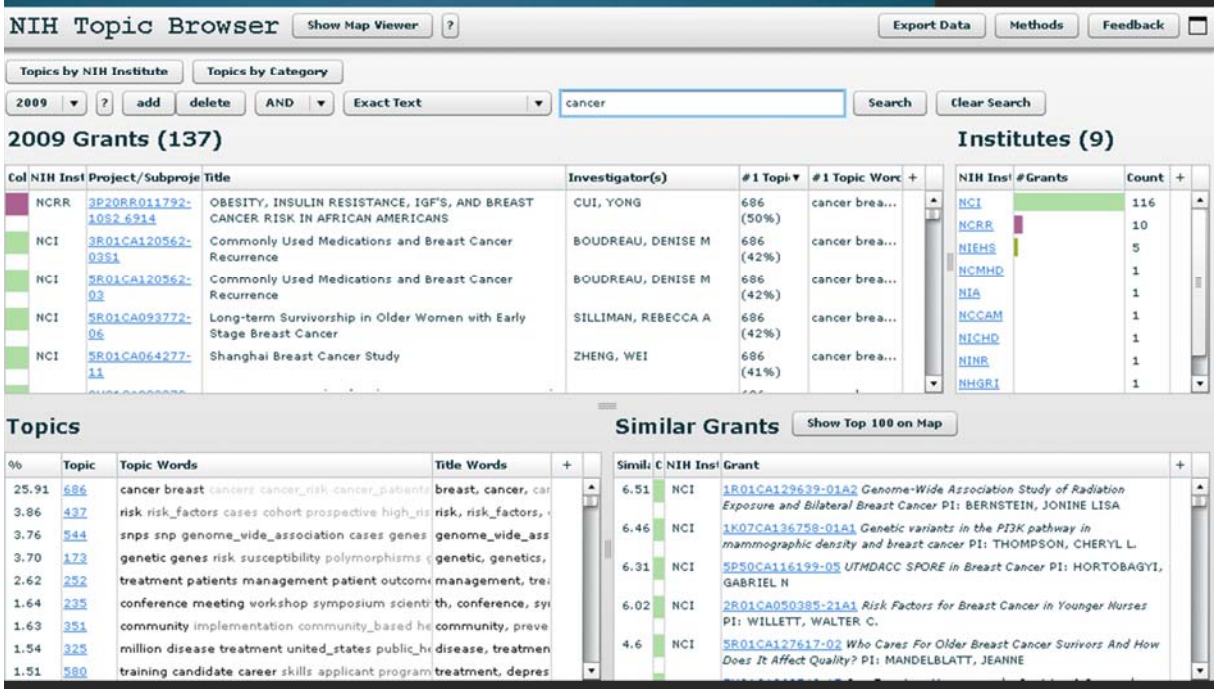
https://app.nihmaps.org

A Topic Database of NIH-Funded Grants



https://app.nihmaps.org

A Topic Database of NIH-Funded Grants

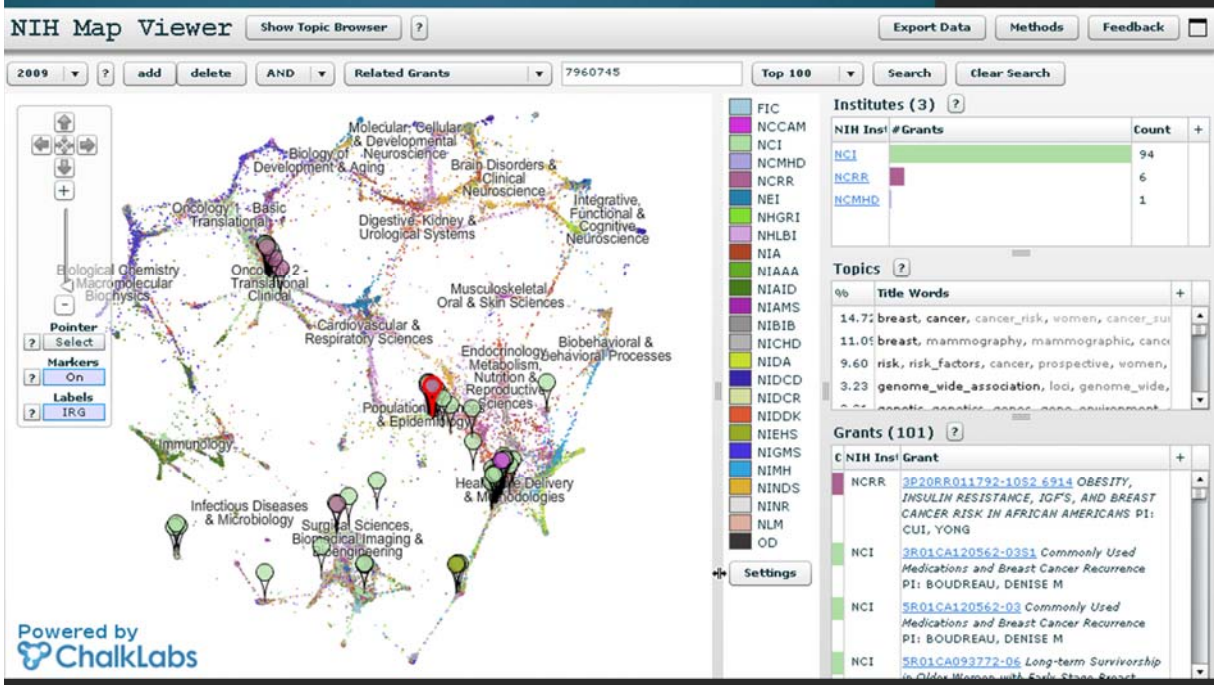


https://app.nihmaps.org

A Topic Database of NIH-Funded Grants

https://app.nihmaps.org

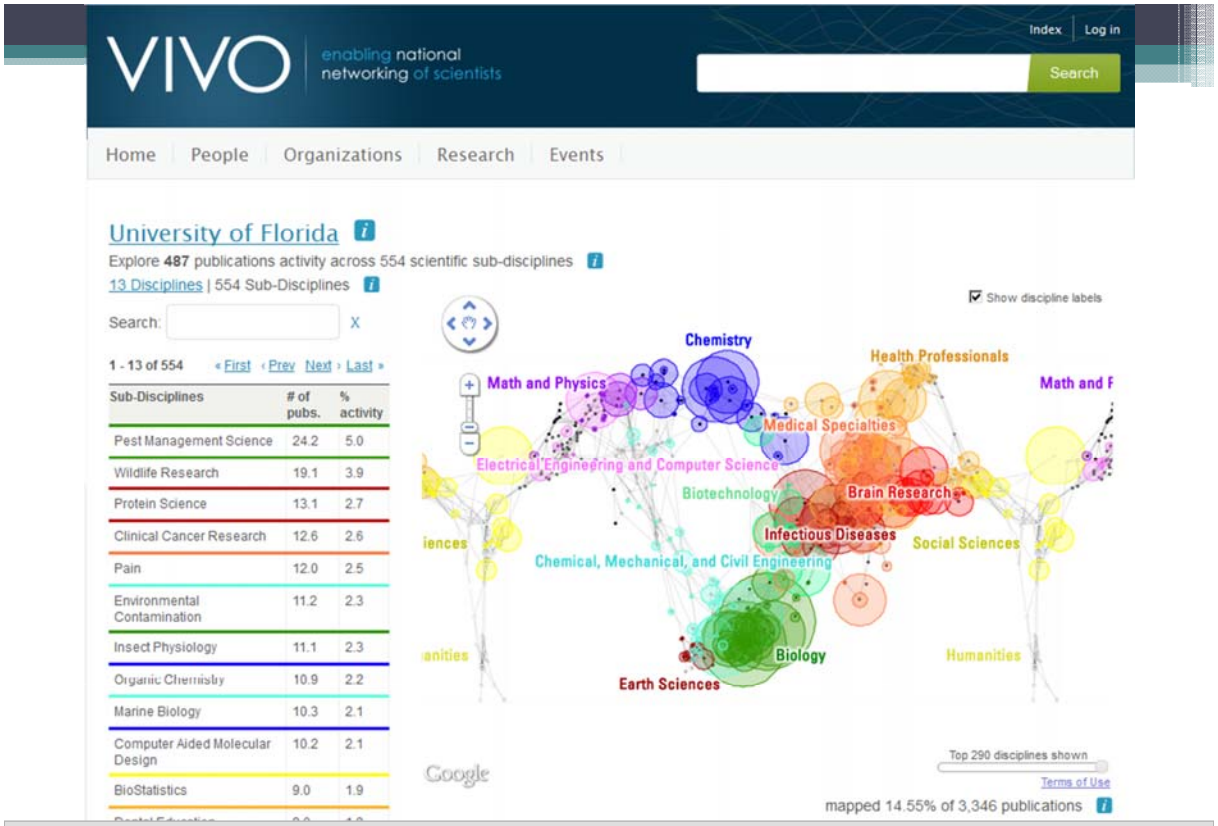
A Topic Database of NIH-Funded Grants



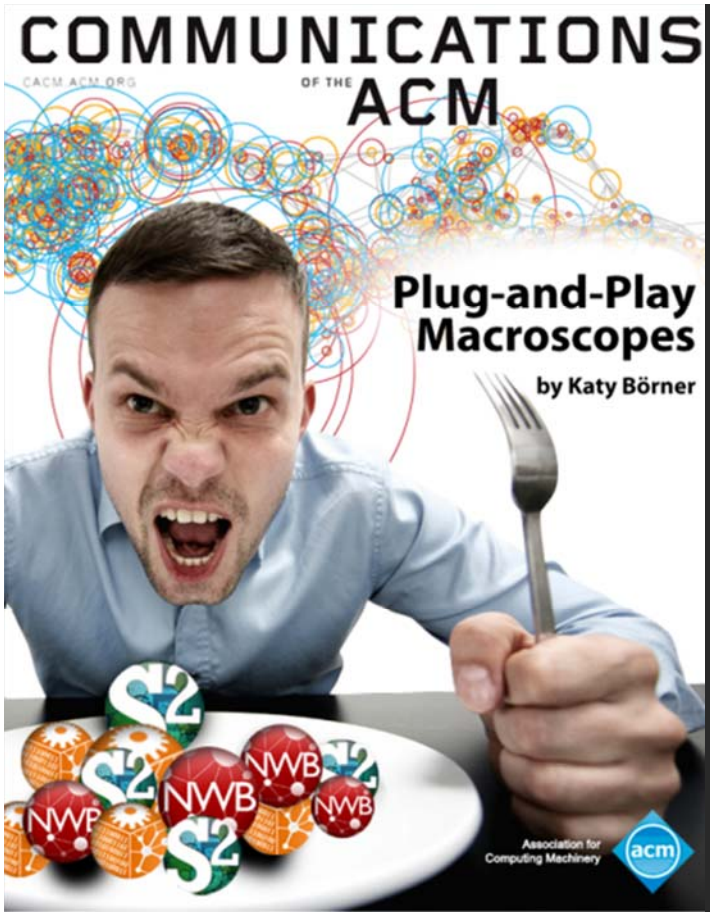
https://app.nihmaps.org

http://nrn.cns.iu.edu

Geospatial Analysis (Where) A geospatial map of the US is used to show where what science is performed by whom.



Topical Analysis (What) Science map overlays show where a person, department, or university publishes most in the world of science.

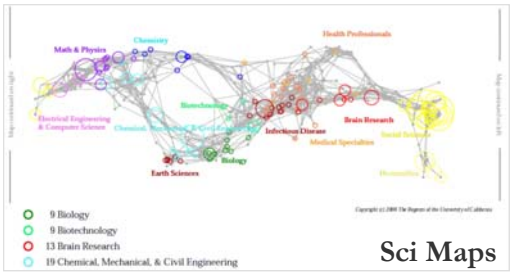


Börner, Katy. (March 2011). Plug-and-Play Macroscopes. *Communications of the ACM, 54(3), 60-69.*

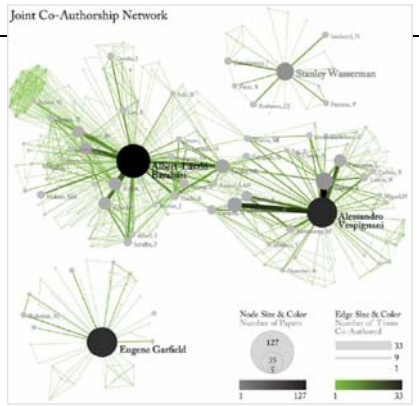
Video and paper are at
http://www.scivee.tv/node/27704

Sci² Tool – "Open Code for S&T Assessment"
http://sci2.cns.iu.edu

OSGi/CIShell powered tool with NWB plugins and many new scientometrics and visualizations plugins.



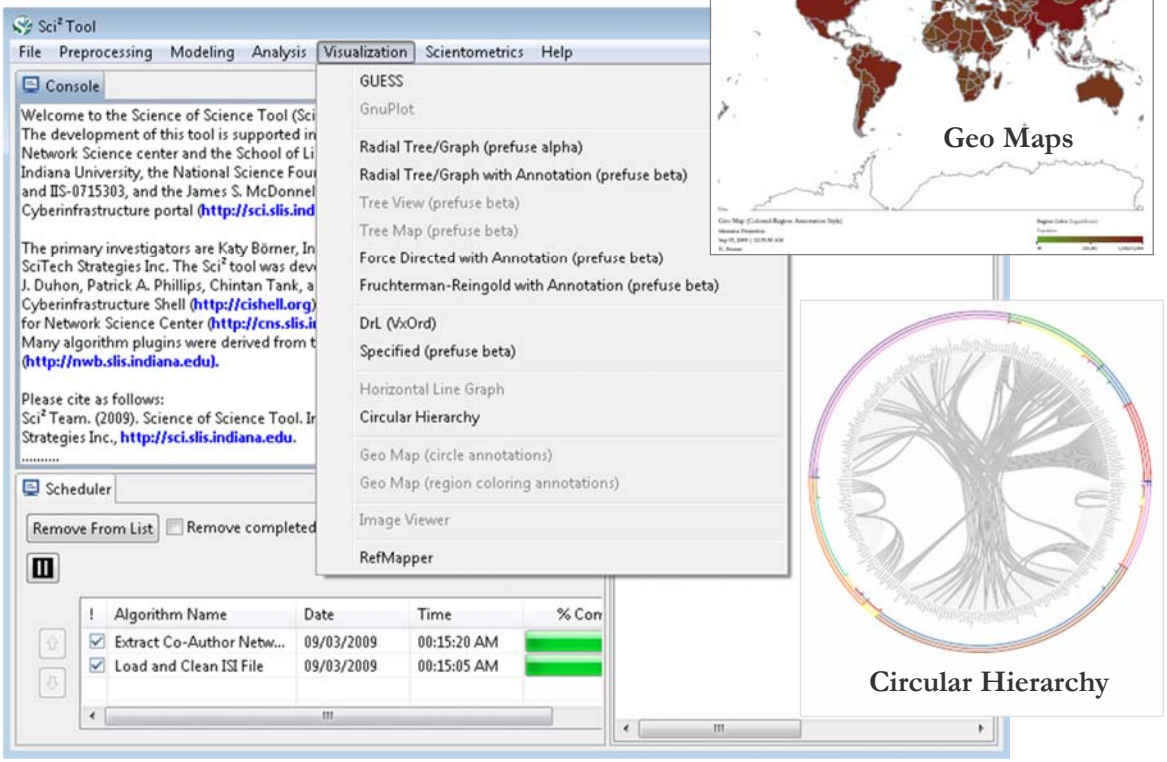
Sci Maps



GUESS Network Vis

Börner, Katy, Huang, Weixia (Bonnie), Linnemeier, Micah, Duhon, Russell Jackson, Phillips, Patrick, Ma, Nianli, Zoss, Angela, Guo, Hanning & Price, Mark. (2009). Rete-Netzwerk-Red: Analyzing and Visualizing Scholarly Networks Using the Scholarly Database and the Network Workbench Tool. Proceedings of ISSI 2009: 12th International Conference on Scientometrics and Informetrics, Rio de Janeiro, Brazil, July 14-17 . Vol. 2, pp. 619-630.

Sci² Tool



Sci² Tool Usage at National Institutes of Health

Sci2 Tool now supports Web services and serves as a visual interface to publically available NIH RePORT Expenditure and Results RePORTER)/ RePORTER data provided by NIH.

NETE A|V - Temporal Analysis

Find and select one or multiple PIs

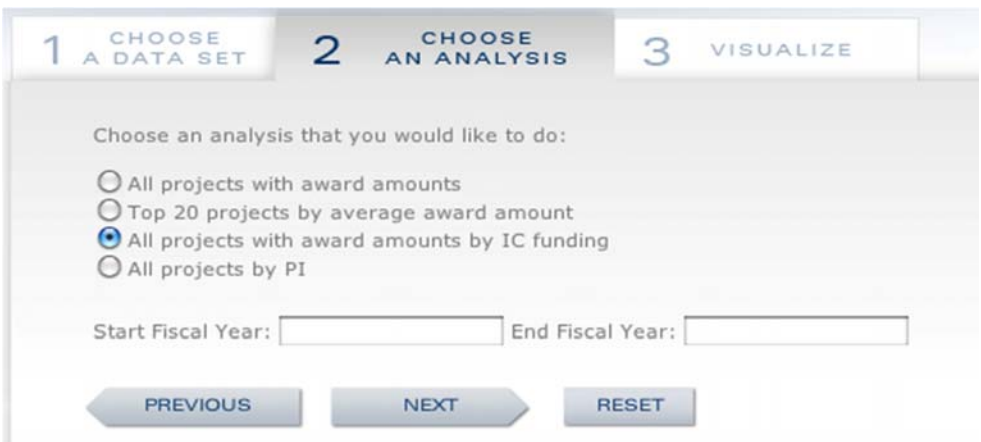
Select Select All / Deselect All	Name	Organization	Total Projects	Projects with Award Amounts	Profile Id
☐	CEDAR, HOWARD	HEBREW UNIVERSITY OF JERUSALEM	6	6	1858057
☐	YANAI, JOSEPH	HEBREW UNIVERSITY OF JERUSALEM	3	3	1869372
☐	OLSON, SARA H	HEBREW UNIVERSITY OF JERUSALEM	6	6	1872521
☐	MINKE, BARUCH	HEBREW UNIVERSITY OF JERUSALEM	1	1	1876962
☐	SCHULDINER, SHIMON	HEBREW UNIVERSITY OF JERUSALEM	3	3	1901430

Sci² Tool Usage at National Institutes of Health

NETE A|V - Temporal Analysis

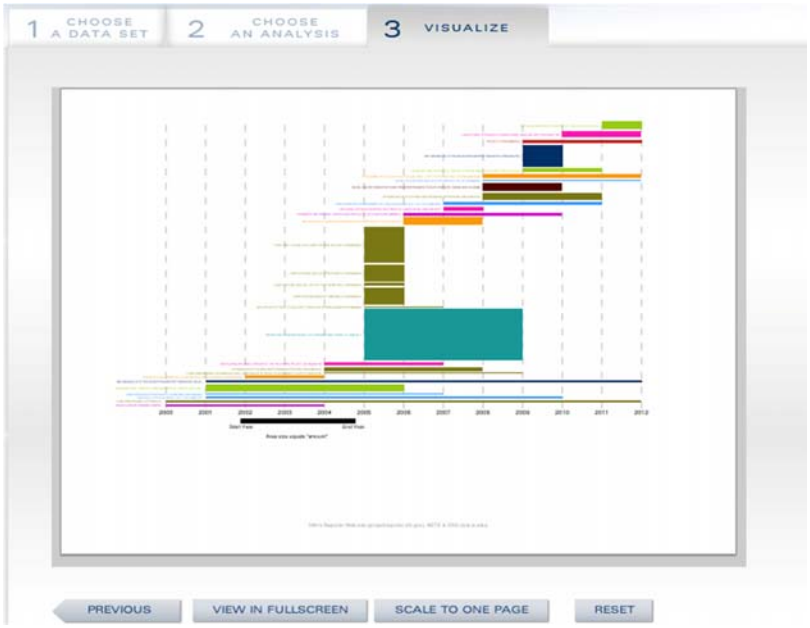
Visualize portfolio of projects on the timescale

- Projects with award amounts
- Projects by IC funding
- Projects by PIs



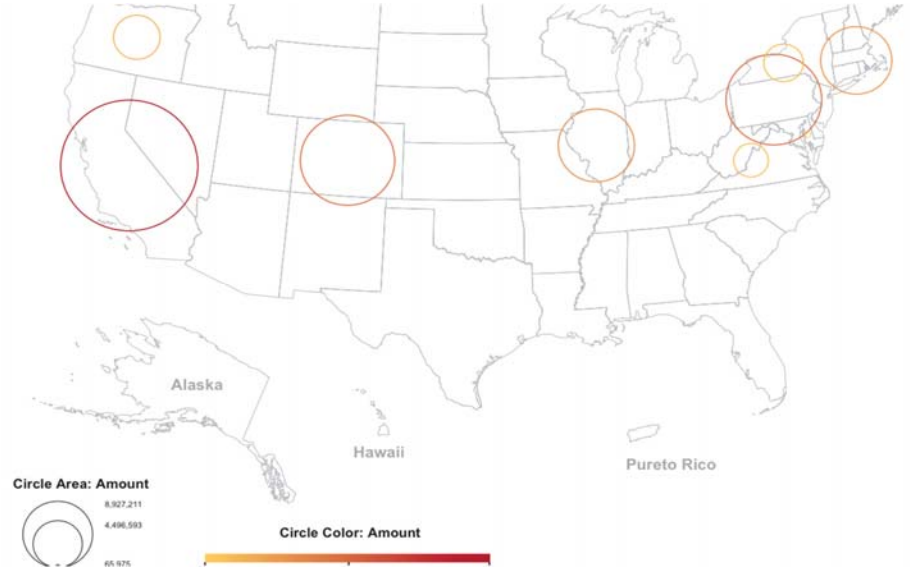
NETE A|V - Temporal Analysis – Projects with Award Amounts

Four-variable visualizations, e.g. time, amounts, PIs and projects

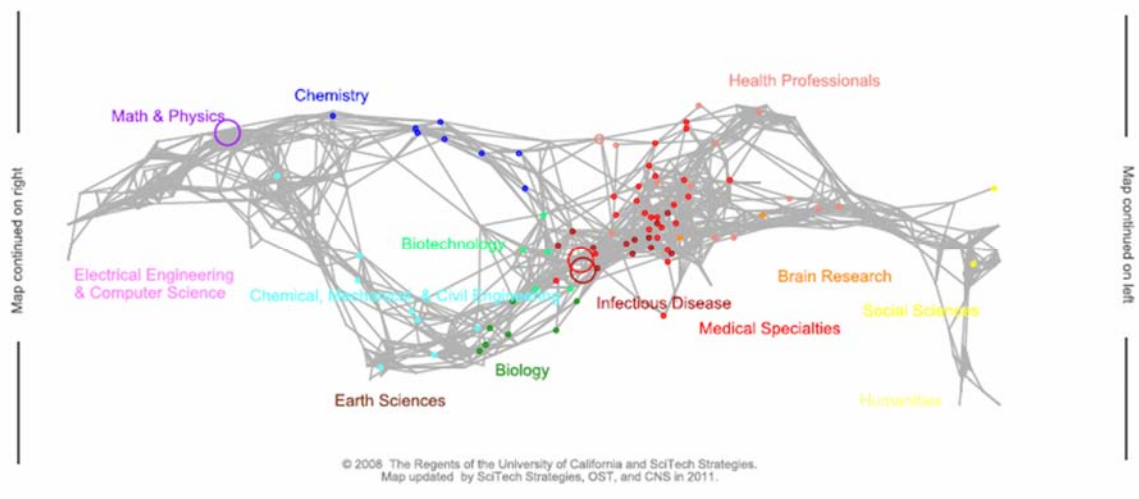


Sci² Tool Usage at National Institutes of Health

NETE A|V – Geospatial Analysis – Projects by External Organization

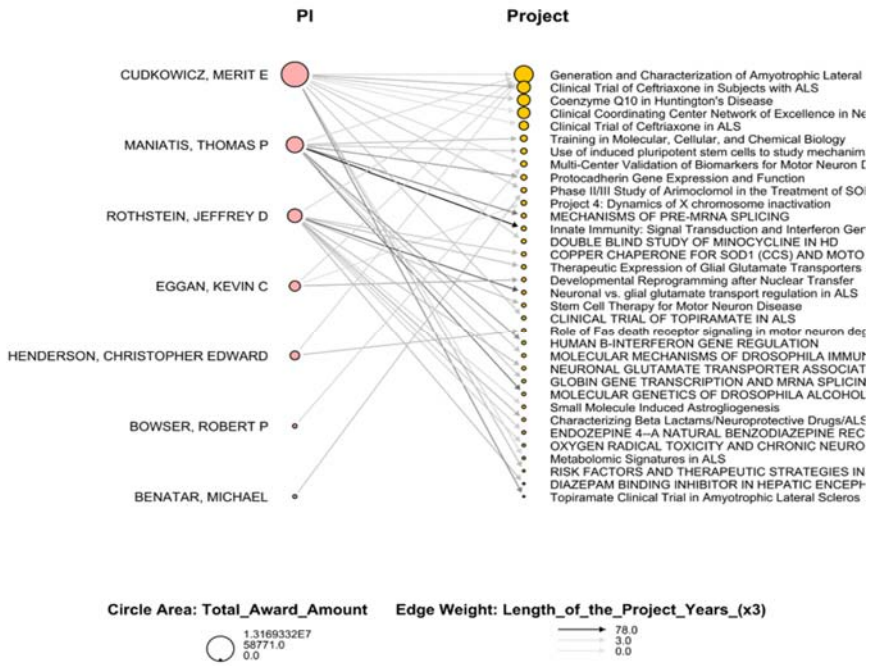


NETE A|V – Topical Analysis – Publications in a Project Portfolio



Sci² Tool Usage at National Institutes of Health

NETE A|V – Network Analysis – (Co-) PIs to Projects



"Science of Science Research and Practice" Tutorial

Time/Date: 9:00am-12:30pm on December 14, 2012

Place: Building #73 on map, Room 213, Eng Bldg #2, Hongo Campus, Univ of Tokyo
http://www.u-tokyo.ac.jp/en/about/documents/Hongo_CampusMap_E.pdf

Instructor: Dr. Katy Börner, SLIS, Indiana University

Format: Lecture and "hands-on" training. Please bring your laptop and pre-install the tool (free download at http://sci2.cns.iu.edu).

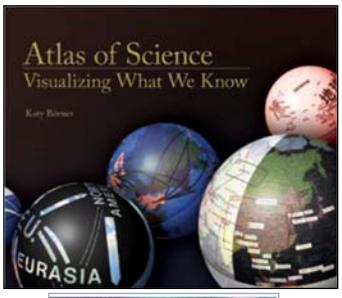
Links:
http://sci2.cns.iu.edu
http://sci2.wiki.cns.iu.edu
http://scimaps.org/atlas

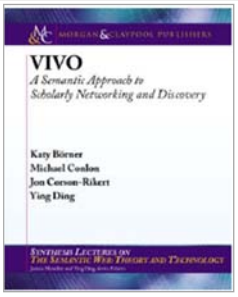
Reference: Börner, Katy. (2010). Atlas of Science: Visualizing What We Know. The MIT Press. (http://scimaps.org/atlas)

Interested to Learn More? Take the IVMOOC

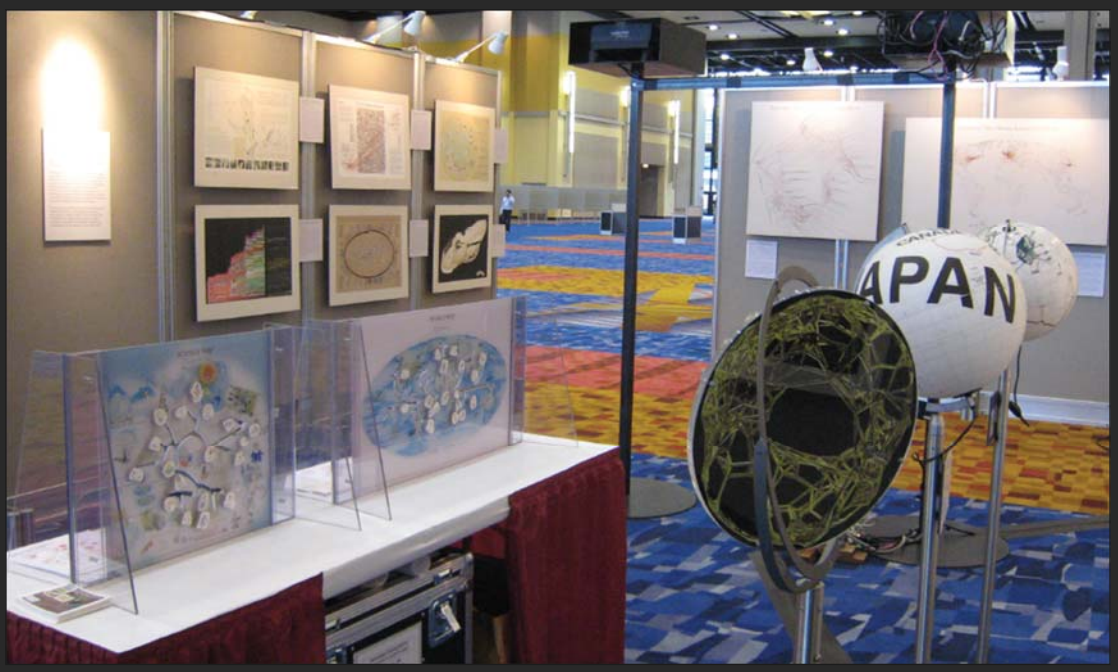
References

- Börner, Katy, Chen, Chaomei, and Boyack, Kevin. (2003). **Visualizing Knowledge Domains.** In Blaise Cronin (Ed.), *ARIST*, Medford, NJ: Information Today, Volume 37, Chapter 5, pp. 179-255. http://ivl.slis.indiana.edu/km/pub/2003-borner-arist.pdf
- Shiffrin, Richard M. and Börner, Katy (Eds.) (2004). **Mapping Knowledge Domains**. *Proceedings of the National Academy of Sciences of the United States of America*, 101(Suppl_1). http://www.pnas.org/content/vol101/suppl_1/
- Börner, Katy, Sanyal, Soma and Vespignani, Alessandro (2007). **Network Science.** In Blaise Cronin (Ed.), *ARIST*, Information Today, Inc., Volume 41, Chapter 12, pp. 537-607. http://ivl.slis.indiana.edu/km/pub/2007-borner-arist.pdf
- Börner, Katy (2010) **Atlas of Science**. MIT Press. http://scimaps.org/atlas
- Scharnhorst, Andrea, Börner, Katy, van den Besselaar, Peter (2012) **Models of Science Dynamics**. Springer Verlag.
- Börner, K.; Ding, Y.; Conlon, M.; Corson-Rikert, J. (2012). **VIVO: A Semantic Approach to Scholarly Networking and Discovery**. Morgan & Claypool Publishers.





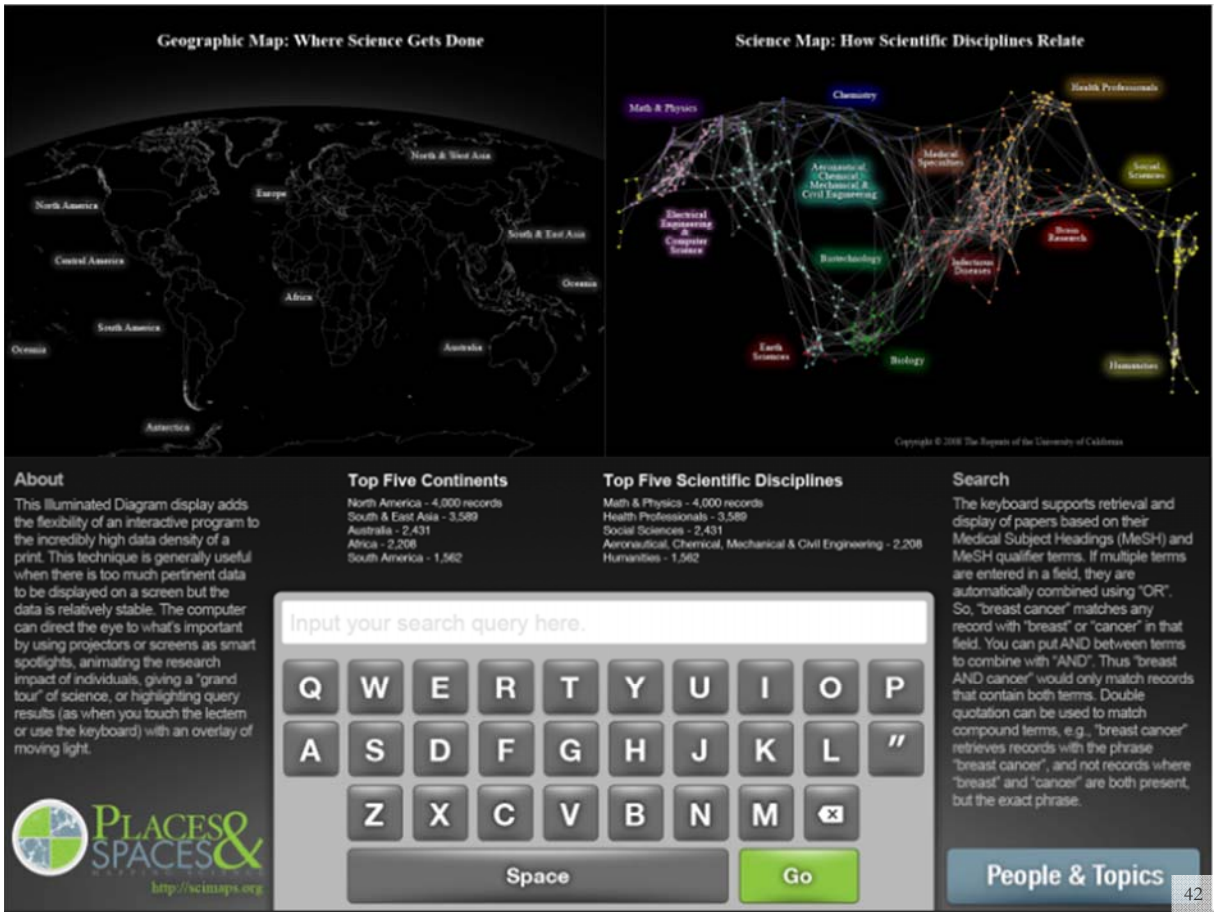
Places & Spaces: Mapping Science Exhibit (http://scimaps.org)

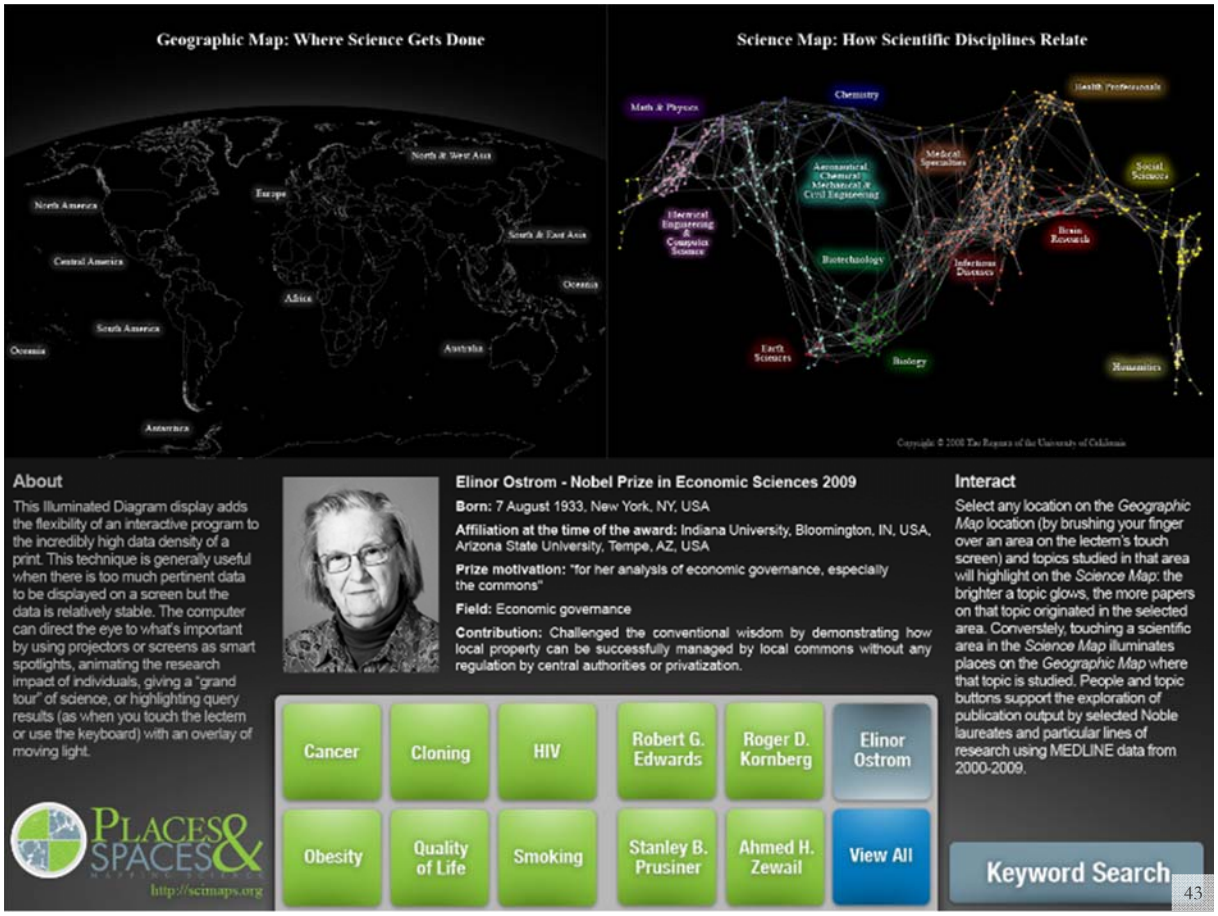


After eight years, there now exist 80 out of 100 maps.

Debut of 5th Iteration of Mapping Science Exhibit at MEDIA X was on May 18, 2009 at Wallenberg Hall, Stanford University, *http://mediax.stanford.edu*, *http://scaleindependentthought.typepad.com/photos/scimaps*

Science Maps in “Expedition Zukunft” science train visiting 62 cities in 7 months 12 coaches, 300 m long Opening was on April 23rd, 2009 by German Chancellor Merkel
http://www.expedition-zukunft.de





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Ingo Gunther's Worldprocessor globe design on display at the Giant Geo Cosmos OLED Display at the Museum of Emerging Science and Innovation in Tokyo, Japan

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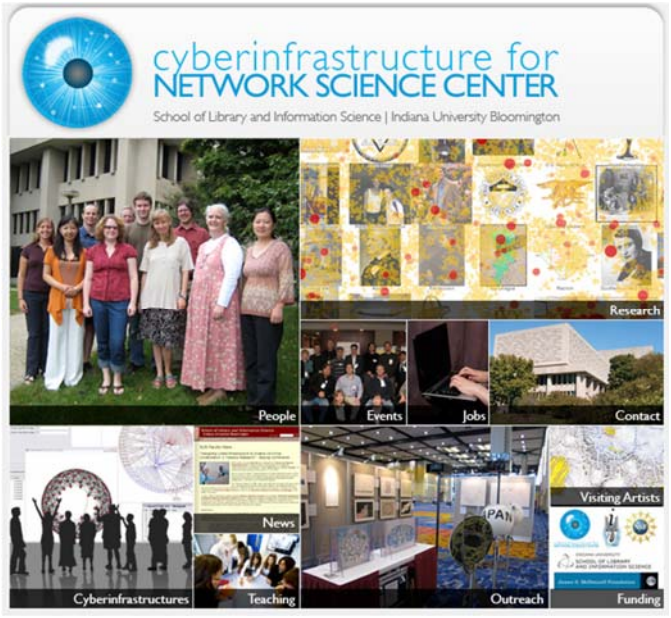

All papers, maps, tools, talks, press are linked from http://cns.iu.edu

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