

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.

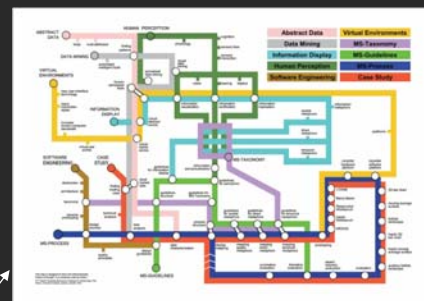
*International Symposium on Science of Science and Innovation
Policy "Toward Synergetic Collaborations and Realization of
Innovation"
The University of Tokyo, Tokyo, Japan*

December 13, 2012



Take terra bytes of data

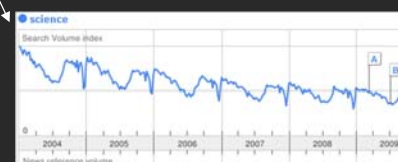
**Black
Box**



Find your way



Find collaborators, friends



Identify trends

Geographic Map

Science Map



Funding
 NIH
 NSF
 USDA

Patents
 USPTO

Publications
 DOE
 ISI
 Medline

Amount Count
 Citations Count

From year 1901 to year 2009

Search by keyword

<http://mapsustain.cns.iu.edu>



Detail

About

Geographic Visualization

Here we have a more traditional view of the records - a geographic overlay. Featured here are the records that list both a city and state in the United States. Feel free to search, zoom, pan, and click for descriptions.

Geographic Map

Science Map



Funding
 NIH
 NSF
 USDA

Patents
 USPTO

Publications
 DOE
 ISI
 Medline

Maps

Detail

Data

About

About

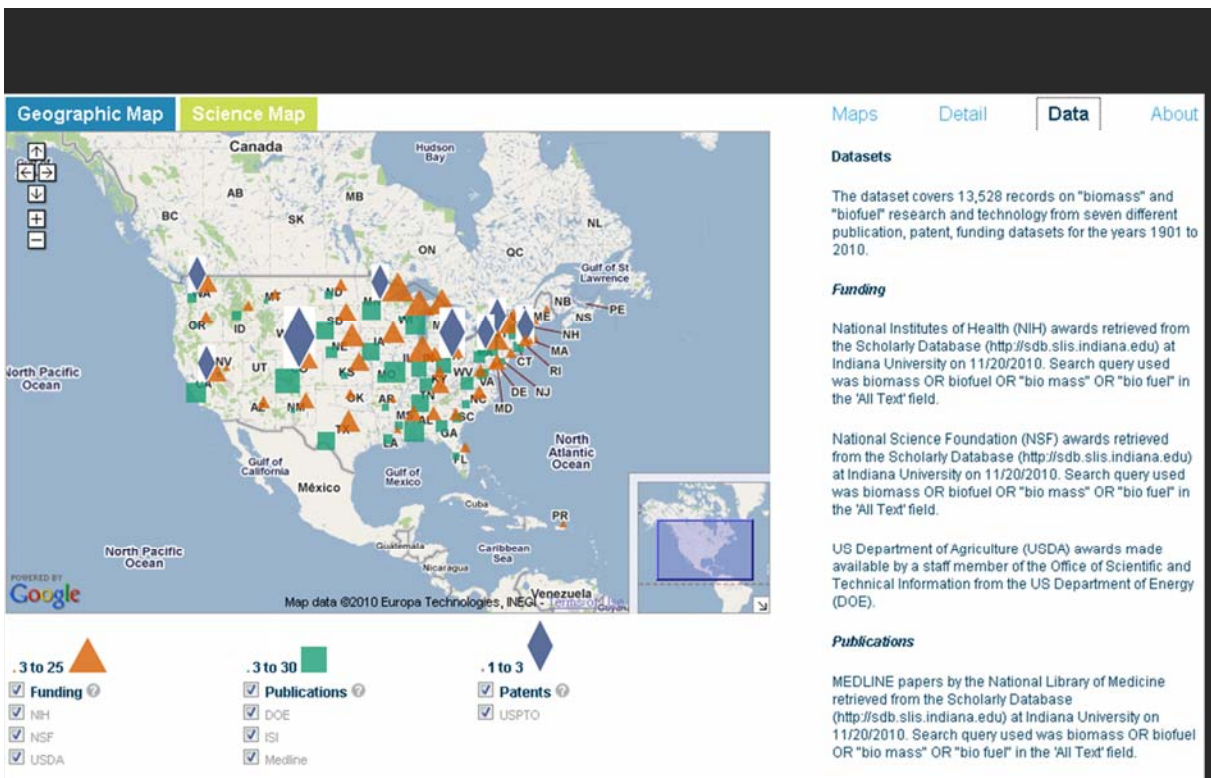
A new field of *Sustainability Science and Engineering* is emerging that seeks to understand the fundamental character of interactions between nature and human society and to help steer the impact of humanity's needs on the planet's natural resources towards sustainable trajectories. The field is unified in clear terms by its ultimate goals but occupies an interdisciplinary position among traditional research fields, spanning both science and engineering and spreading across disciplines as diverse as agriculture, ecology, oceanography, climate studies, economics, a diverse set of social sciences, energy and materials and several additional aspects of engineering, physics, biology, and chemistry. Although Sustainability Science and engineering is by now widely discussed in the scientific and engineering community, and is beginning to be connected to the political agenda for economic and social development, it remains unclear to what extent its many facets are being integrated into a global perspective and whether researchers are utilizing it as a nexus to collaborate across traditional scientific and engineering fields.

Please consult the [Mapping the Structure and Evolution of Sustainability Science](#) workshop web page for further information and details.

Web Page Design

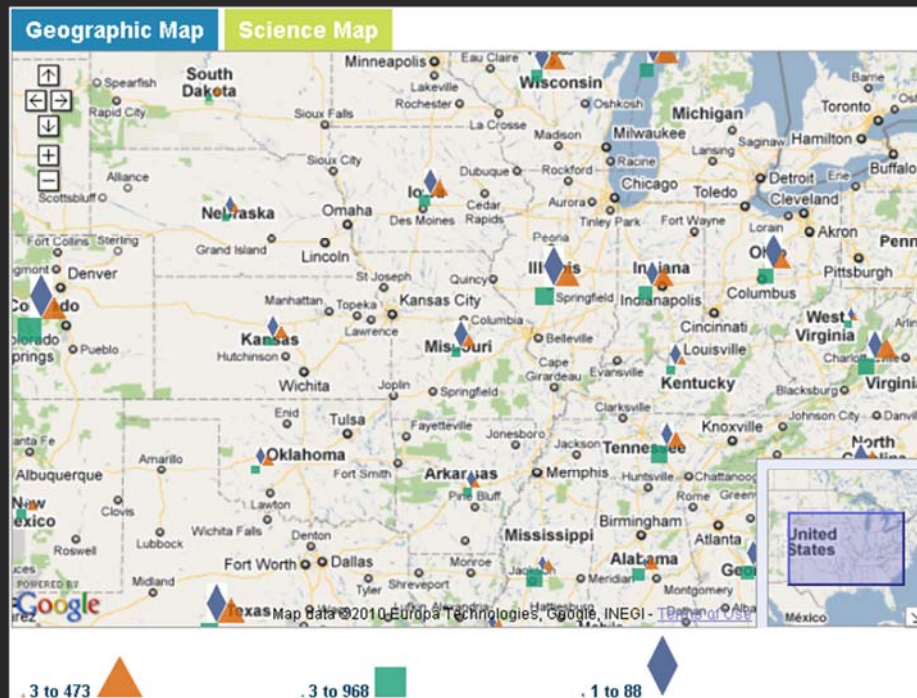
This web site provides an interactive interface to publication, patent, and funding data on 'biomass' and 'biofuel' research. Visitors are invited to explore what funding is available in what geospatial regions and in what areas of science and what publications and patents

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**.



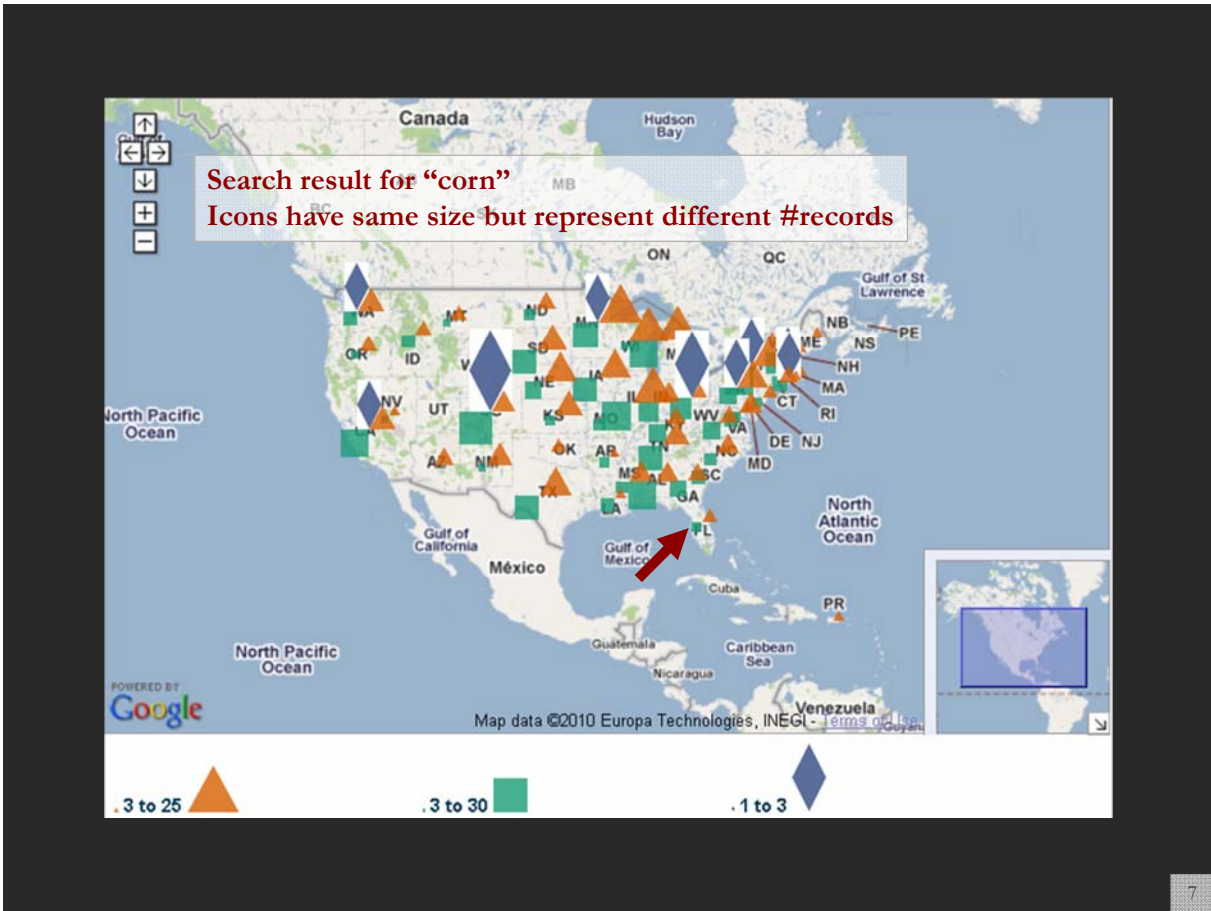
The geographic map at state level.

5



The geographic map at city level.

6



Science Map

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

Maps Detail Data About

> Florida

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

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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; CEREALS; CHEMICAL REACTIONS; DATA; DECOMPOSITION; EFFICIENCY; FUELS; GRASS; HYDROLYSIS; INFORMATION; LYSIS; NUMERICAL DATA; PLANTS;

Done

Detailed information on demand
via original source site for exploration and study.

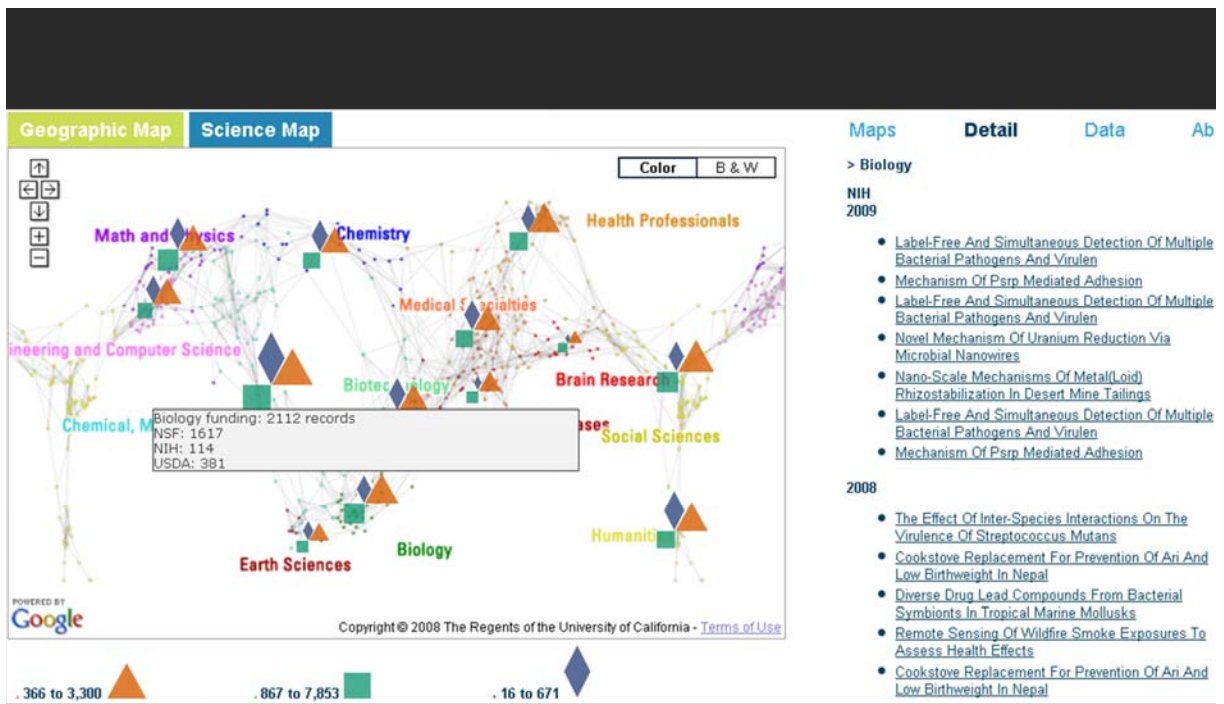
Geographic Map **Science Map**

Search result for "Miscanthus," a special energy biomass crops for second generation biofuel.

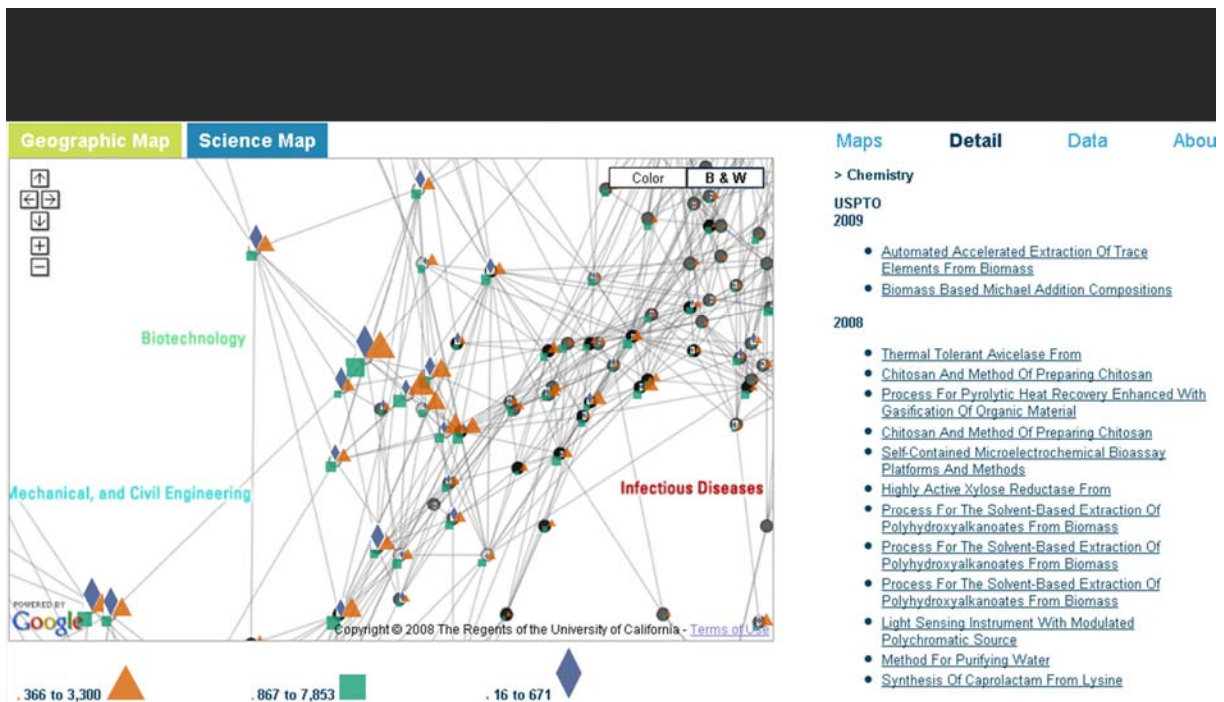
POWERED BY Google

Map data ©2010 Europa Technologies, INEGI

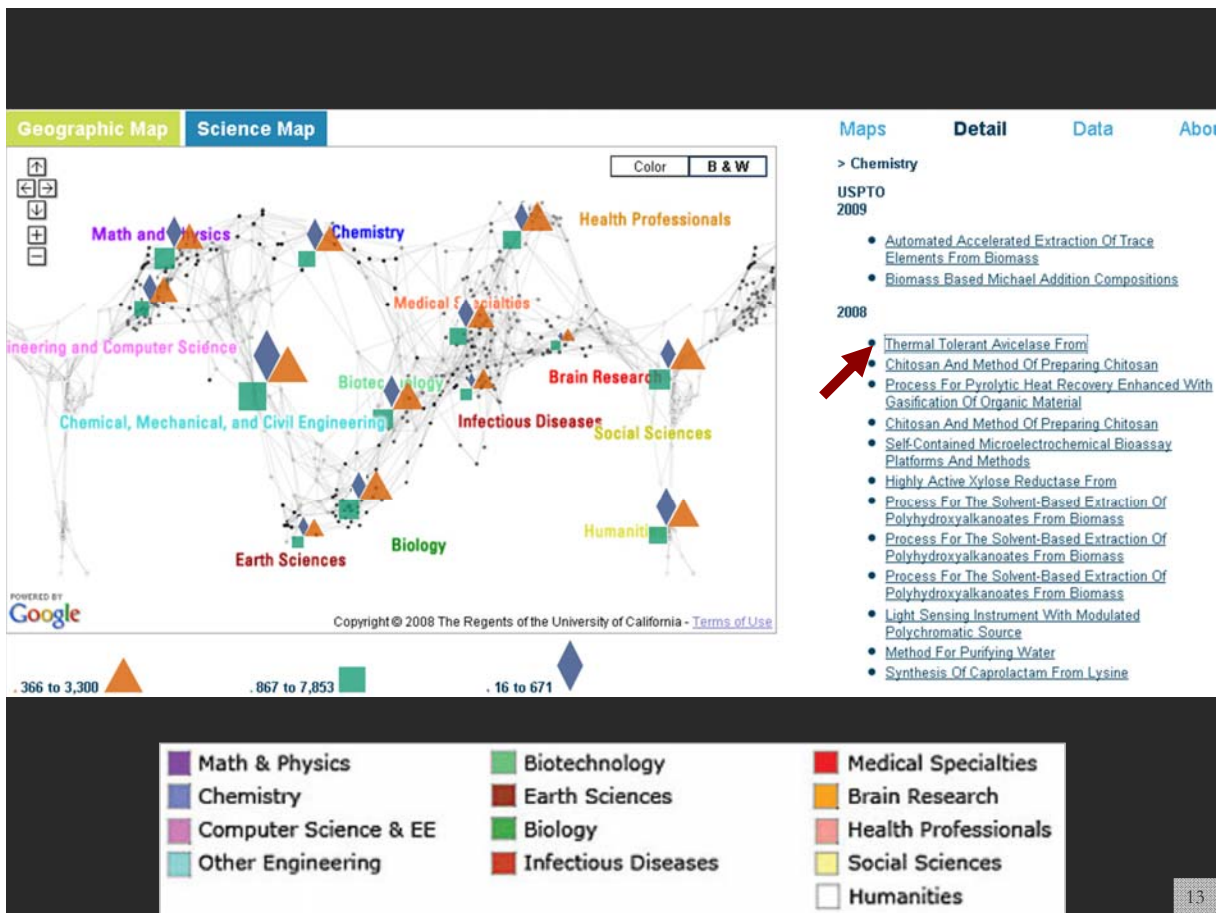
2 to 2 .3 to 4 .0 to 0



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



The science map at 554 sub-disciplines level.



- Maps Detail Data About
- > 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

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=/netacgi/PTO/srch

MapSustain United States Patent: 7364890 United States Patent: 7364890 Information Bridge: DOE Scientific a...

USPTO PATENT FULL-TEXT AND IMAGE DATABASE

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Images

(1 of 1)

United States Patent 7,364,890
Ding, et al. April 29, 2008

Thermal tolerant avicelase from *Acidothermus cellulolyticus*


Abstract

The invention provides a thermal tolerant (thermostable) cellulase, AvIII, that is a member of the glycoside hydrolase (GH) family. AvIII 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)
Appl. No.: 09/017,276

Done

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Information

Gene Therapy Data Maps

Archiving Services

Insertion Site Analysis

Pharm/Tox Resources

Clinical Trial Testing

Reagent Repository

Educational Resources

My NGVB

LOG IN

user name:

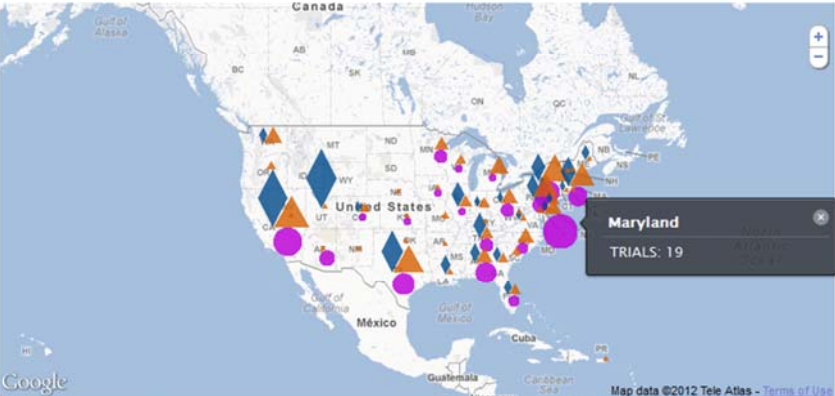
password:

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Gene Therapy Geographic Data Map



Funding Publications Patents

NIH Medline USPTO

NSF Clinical Trials


Maps Detail Data About

Geographic Visualization


This map shows provides a tool to locate site of gene therapy research in the US. The map is searchable by publication, patent application, federal grants and clinical trials. The maps also include controls to select subsets of the entire gene therapy data set. Checkboxes allow users to limit data sources by institution or by source type (i.e., funding, publications, patents, or clinical trial). Radio buttons toggle the markers between representing a count of the records or another relevant numerical representation (dollar amount for funding, citations for publications and ... can also be limited by date by ... and years for the query. A ...

From year 1972 to year 2011


Search by: Search




2 to 468



0 to 0




0 to 28



0 to 19

<http://kongch.cns.iu.edu/genethrapy/geomap.html>



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Information

Gene Therapy Data Maps

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Clinical Trial Testing

Reagent Repository

Educational Resources

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Gene Therapy Geographic Data Map



Funding Publications Patents

NIH Medline USPTO

NSF Clinical Trials

Maps Detail Data About


> Maryland

TRIALS 2011


- [Phase III Study Of Metastatic Cancer That Expresses Mage-A3/12 Using Lymphodepleting Conditioning Followed By Infusion Of Anti-Mage-A3/12 Tcr-Gen Engineered Lymphocytes](#)
- [Phase III Study Of Metastatic Cancer That Expresses Nv-Eso-1 Using Lymphodepleting Conditioning Followed By Infusion Of Gene Engineered Lymphocytes Cotransduced With Genes Encoding Il-12 And Anti-Nv Eso-1 Tcr](#)
- [A Phase III Study Of The Safety And](#)

From year 1972 to year 2011


Search by: Search




2 to 468



0 to 0



0 to 28



0 to 19

[Export Data to CSV](#)

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

NIH Map Viewer

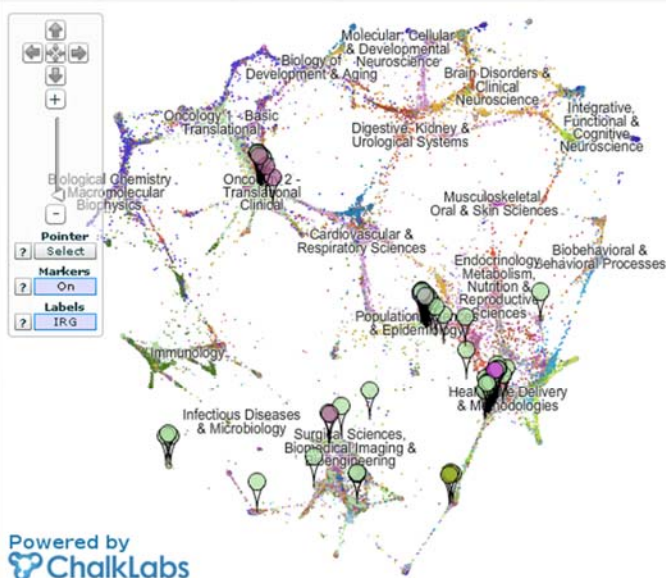
Show Topic Browser ?

Export Data

Methods

Feedback

2009 ? add delete AND Topic Words cancer breast cancers cancer_risk cancer_p 20 0/0 ? Search Clear Search



- FIC
- NCCAM
- NCI
- NCMHD
- NCRB
- NEI
- NHGRI
- NHLBI
- NIA
- NIAAA
- NIAID
- NIAMS
- NIBIB
- NIDCD
- NIDA
- NIDDK
- NIDCR
- NIDDK
- NIEHS
- NIGMS
- NIMH
- NINDS
- NINR
- NLM
- OD

Institutes (9) ?

NIH Inst	# Grants	Count	+
NCI		116	
NCRB		10	
NIEHS		5	
NCMHD		1	
NIA		-	

Topics ?

%	Title Words	+
25.9	breast, cancer, cancer_risk, women, cancer_sui	
3.86	risk, risk_factors, cancer, prospective, women,	
3.76	genome_wide_association, loci, genome_wide,	
3.70	genetic, genetics, genes, gene_environment, i	
3.22	management, treatment, outcomes, patients,	

Grants (137) ?

NIH Inst	Grant	+
NCRB	2P20RR011792-10S2 6914 OBESITY, INSULIN RESISTANCE, IGF'S, AND BREAST CANCER RISK IN AFRICAN AMERICANS PI: CUI, YONG	
NCI	3R01CA120562-03S1 Commonly Used Medications and Breast Cancer Recurrence PI: BOUDREAU, DENISE M	
NCI	5R01CA120562-03 Commonly Used Medications and Breast Cancer Recurrence PI: BOUDREAU, DENISE M	
NCI	5R01CA093772-06 Long-term Survivorship in Older Women with Early Stage Breast	

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NIH TOPIC MAPS

A Topic Database of NIH-Funded Grants

NIH Topic Browser - Institute Information

[NLM](#) [NCI](#) [NEI](#) [NCCAM](#) [NIEHS](#) [NIGMS](#) [NIH](#) [NICHD](#) [NINDS](#) [NIA](#) [NCMHD](#) [NIAMS](#) [NIH](#) [NIDDK](#) [NHLBI](#) [NIAAA](#) [NIMH](#) [NHGRI](#) [FIC](#) [NIBIB](#) [NIDCR](#) [NCRR](#) [NIAID](#) [NIDA](#) [NIDCD](#)

Institute: NCI - National Cancer Institute

Export Data

Top Topics

%	Topic	Topic Words	Title Words	Phrases
4.05	210	cancer cancer_center program cancer_research	cancer_center, program, cancer, core, spore, tre	anderson cancer_center, shared resource, canc
2.42	597	cancer tumor tumorigenesis tumors myc tumor_	cancer, tumorigenesis, myc, tumor_suppressor,	tumor progression, malignant transformation, tu
2.28	430	cancer treatment therapy patients tumor diseas	cancer, therapy, treatment, tumor, prostate, bre	cancer treatment, treatment cancer, metastatic
1.73	16	metastasis invasion tumor metastatic progressi	metastasis, cancer, invasion, breast, tumor, pro	tumor progression, invasion metastasis, cancer
1.47	345	clinical_trials trials oncology cancer treatment cli	clinical_trials, clinical_oncology, oncology, unit, p	clinical_trials unit, phase_j clinical_trials, cancer
1.43	686	cancer breast cancers cancer_risk cancer_patie	breast, cancer, cancer_risk, women, cancer_sur	breast cancer, breast cancer_risk, breast cancer
1.41	370	tumor immunotherapy t_cells t_cell immunity an	tumor, immunotherapy, t_cell, immunity, t_cells,	antitumor immunity, adoptive immunotherapy, t
1.14	480	therapeutic agents treatment therapies targets	therapeutic, targeting, agents, treatment, there	therapeutic agents, therapeutic targets, therap
1.08	346	biomarkers markers biomarker disease patients	biomarkers, biomarker, markers, disease, cancer	disease progression, biomarker validation, seru
0.98	660	prostate cancer pca cancer_cells incap androge	prostate, cancer, cancer_cells, androgen_recep	prostate cancer, prostate cancer_cells, prostate
0.90	171	scientific committee administrative management	core, administrative, administration, planning, a	steering committee, internal external, institutor
0.87	182	breast cancer her2 cancer_cells human mcf7 neu	breast, cancer, cancer_cells, her2, human, estre	breast cancer, breast cancer_cells, her2 neu, br
0.85	437	risk risk_factors cases cohort prospective high_r	risk, risk_factors, cancer, prospective, women, e	cases controls, prospective cohort_study, modif
0.85	23	tumor tumors tumor_growth mice treatment tun	tumor, tumors, cancer, tumor_growth, targeting	tumor regression, tumor burden, tumor progres
0.85	695	core statistical projects biostatistics investigat	core, biostatistics, data_management, bioinform	biostatistics core, projects core, data_managem
0.79	603	intervention interventions program prevention p	intervention, prevention, interventions, program	randomized_controlled trial, intervention reduce

<https://app.nihmaps.org>

NIH TOPIC MAPS

A Topic Database of NIH-Funded Grants

NIH Topic Browser

Show Map Viewer ?

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Topics by NIH Institute

Topics by Category

2009

?

add

delete

AND

Exact Text

cancer

Search

Clear Search

2009 Grants (137)

Institutes (9)

Col	NIH Inst	Project/Subproj	Title	Investigator(s)	# 1 Topic	# 1 Topic Word	NIH Inst	# Grants	Count
	NCRR	3P20RR011792-10S2-6914	OBESITY, INSULIN RESISTANCE, IGF'S, AND BREAST CANCER RISK IN AFRICAN AMERICANS	CUI, YONG	686	cancer brea...	NCI	116	
	NCI	3R01CA120562-03S1	Commonly Used Medications and Breast Cancer Recurrence	BOUDREAU, DENISE M	686	cancer brea...	NCRR	10	
	NCI	5R01CA120562-03	Commonly Used Medications and Breast Cancer Recurrence	BOUDREAU, DENISE M	686	cancer brea...	NIEHS	5	
	NCI	5R01CA093772-06	Long-term Survivorship in Older Women with Early Stage Breast Cancer	SILLIMAN, REBECCA A	686	cancer brea...	NCMHD	1	
	NCI	5R01CA064277-11	Shanghai Breast Cancer Study	ZHENG, WEI	686	cancer brea...	NIA	1	
							NCCAM	1	
							NICHD	1	
							NIHR	1	
							NHGRI	1	

Topics

Similar Grants

Show Top 100 on Map

%	Topic	Topic Words	Title Words	Similar	NIH Inst	Grant
25.91	686	cancer breast cancers cancer_risk cancer_patients	breast, cancer, car	6.51	NCI	1R01CA129639-01A2 Genome-Wide Association Study of Radiation Exposure and Bilateral Breast Cancer PI: BERNSTEIN, JONINE LISA
3.86	437	risk risk_factors cases cohort prospective high_ris	risk, risk_factors, v	6.46	NCI	1K07CA136758-01A1 Genetic variants in the PI3K pathway in mammographic density and breast cancer PI: THOMPSON, CHERYL L.
3.76	544	snps snp genome_wide_association cases genes	genome_wide_ass	6.31	NCI	5P50CA116199-05 UTMADACC SPORE in Breast Cancer PI: HORTOBAGYI, GABRIEL N.
3.70	173	genetic genes risk susceptibility polymorphisms g	genetic, genetics,	6.02	NCI	2R01CA050385-21A1 Risk Factors for Breast Cancer in Younger Nurses PI: WILLETT, WALTER C.
2.62	252	treatment patients management patient outcom	management, tre	4.6	NCI	5R01CA127617-02 Who Cares For Older Breast Cancer Survivors And How Does It Affect Quality? PI: MANDELBLATT, JEANNE
1.64	235	conference meeting workshop symposium scienti	th, conference, sy			
1.63	351	community implementation community_based he	community, preve			
1.54	325	million disease treatment united_states public_h	disease, treatmen			
1.51	580	training candidate career skills applicant program	treatment, depres			

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3P20RR011792-10S2 6914

Map Viewer

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2009 NCCR CUI, YONG

NIH RePORTer

Map Similar Grants

Highlight on Map

Show Parent/Other Subs

OBESITY, INSULIN RESISTANCE, IGF'S, AND BREAST CANCER RISK IN AFRICAN AMERICANS

The purpose of this study is to better understand how lifestyle factors and their interaction with genetic factors influence a women's risk of developing breast cancer. In order to learn more about the causes of breast cancer, we need to compare the lifestyles of people who have breast cancer with those who do not. 600 women are expected to be enrolled.

Top Topics

50.00	686	cancer breast cancers cancer_risk cancer_patients women cancer_surv...
11.54	378	african_american white ethnic racial african_americans black race white...
11.54	348	obesity weight bmi obese overweight weight_loss body_mass_index kg

Tags

NIH Reporting Categories
Breast Cancer... Cancer... Obesity
NIH Concept Keywords
African American... cancer risk... Clinical Research... Computer Retrieval of Information on...

Similar Grants

Similar	Co NIH Insti	Project/Subprojec	Title	Investigator(s)	#1 Topic	#1 Topic Words
0.54	NCI	3K22CA127519-03S1	Beyond Adiposity: Insulin and Inflammation in Postmenopausal Breast Cancer	NUNEZ, NOMELI PANIAGUA	686 (33%)	cancer breast...
0.54	NCI	5K22CA127519-03	Beyond Adiposity: Insulin and Inflammation in Postmenopausal Breast Cancer	NUNEZ, NOMELI PANIAGUA	686 (33%)	cancer breast...
0.48	NCI	5R01CA128799-02	Mechanisms for Increased Breast Cancer Risk in Type 2 Diabetes	LEROITH, DEREK	66 (17%)	diabetes diab...
0.48	NCI	3P30CA013696-36S2 0007	BREAST CANCER RESEARCH	PARSONS, RAMON E	210 (40%)	cancer cancer...
0.48	NCI	3P30CA013696-36S3 0007	BREAST CANCER RESEARCH	PARSONS, RAMON E	210 (40%)	cancer cancer...

<https://app.nihmaps.org>

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NIH TOPIC MAPS

A Topic Database of NIH-Funded Grants

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2009

add

delete

AND

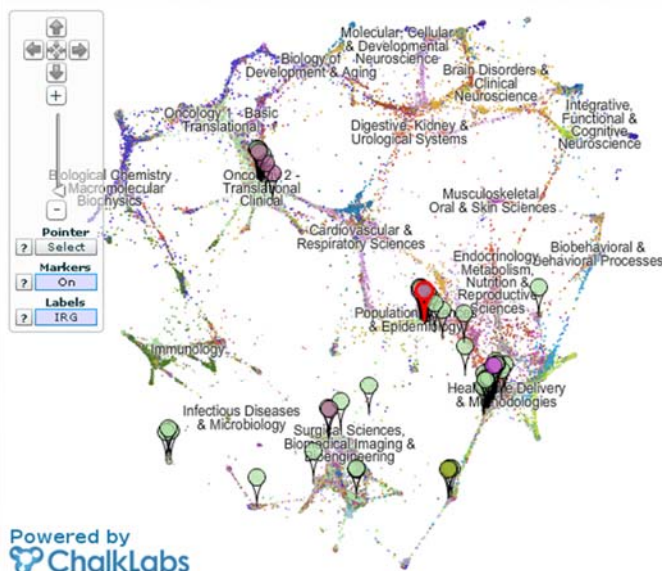
Related Grants

7960745

Top 100

Search

Clear Search



- FIC
- NCCAM
- NCI
- NCMHD
- NCCR
- NEI
- NHGRI
- NHLBI
- NIA
- NIAAA
- NIAID
- NIAMS
- NIBIB
- NICHD
- NIDA
- NIDCD
- NIDCR
- NIDDK
- NIEHS
- NIGMS
- NIMH
- NINDS
- NINR
- NLM
- OD

Institutes (3)

NIH Inst	#Grants	Count
NCI		94
NCCR		6
NCMHD		1

Topics

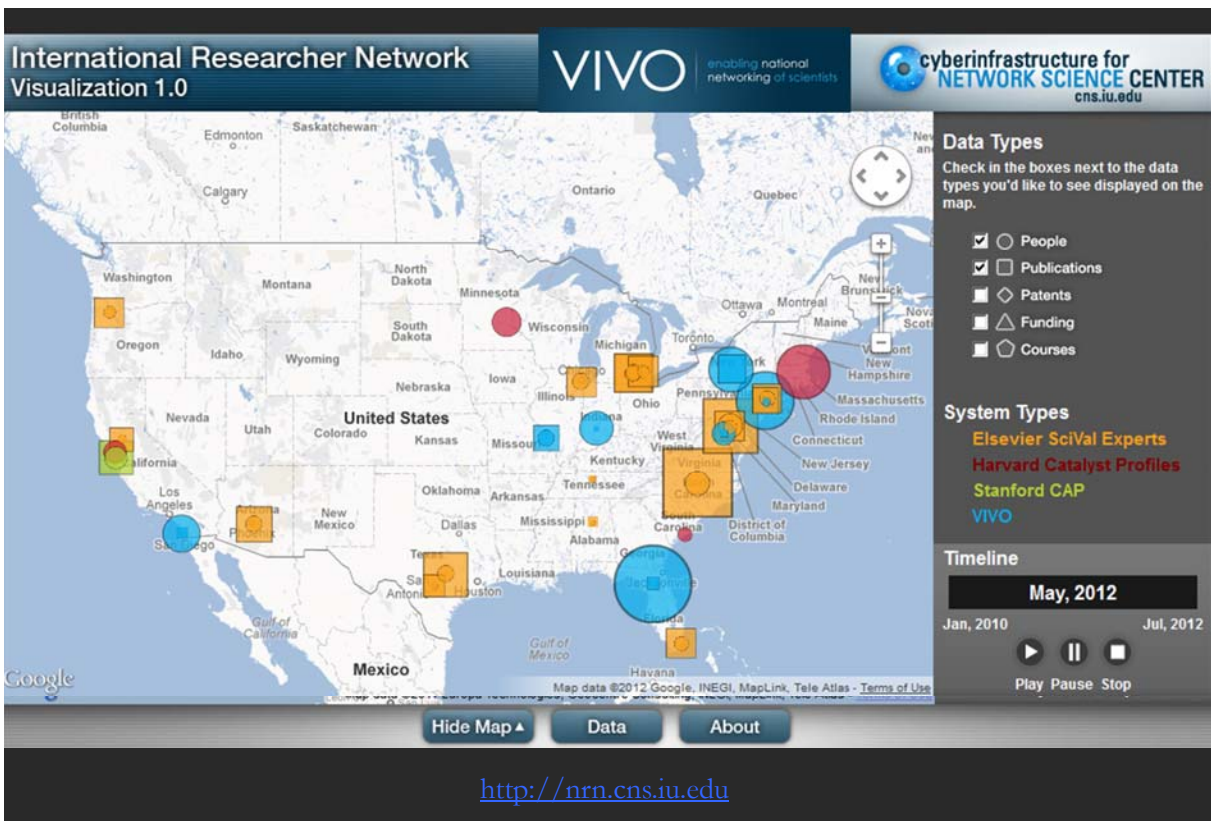
%	Title	Words
14.7%	breast, cancer, cancer_risk, women, cancer_sui	
11.0%	breast, mammography, mammographic, canc	
9.60%	risk, risk_factors, cancer, prospective, women,	
3.23%	genome_wide_association, lod, genome_wide,	

Grants (101)

Co NIH Inst	Grant
NCCR	3P20RR011792-10S2 6914 OBESITY, INSULIN RESISTANCE, IGF'S, AND BREAST CANCER RISK IN AFRICAN AMERICANS P1: CUI, YONG
NCI	5R01CA120562-03S1 Commonly Used Medications and Breast Cancer Recurrence PI: BOUDREAU, DENISE M
NCI	5R01CA120562-03 Commonly Used Medications and Breast Cancer Recurrence PI: BOUDREAU, DENISE M
NCI	5R01CA093772-06 Long-term Survivorship in Older Women with Early Stage Breast

<https://app.nihmaps.org>

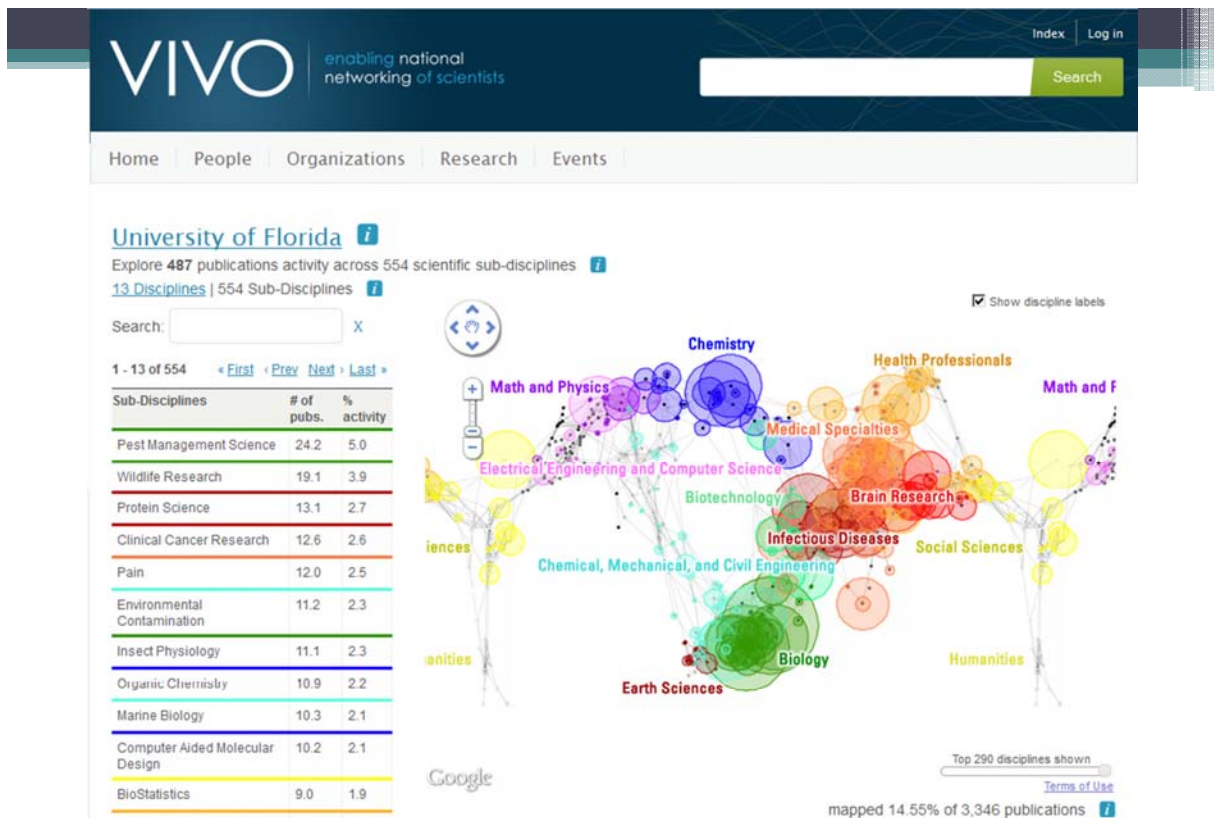
22



<http://nrn.cns.iu.edu>

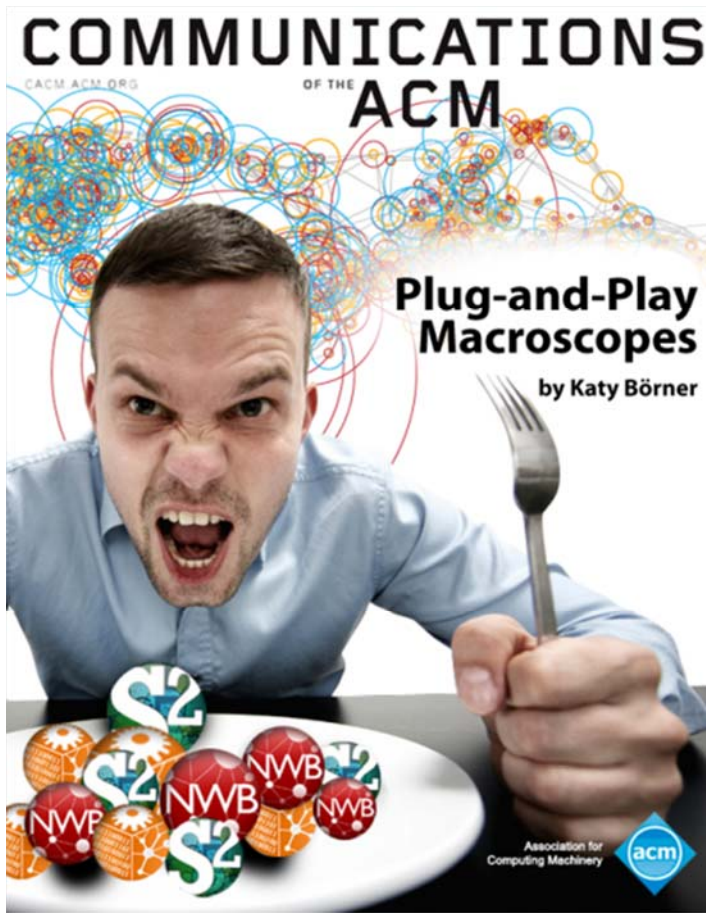
Geospatial Analysis (Where) A geospatial map of the US is used to show where what science is performed by whom.

23



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

24



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

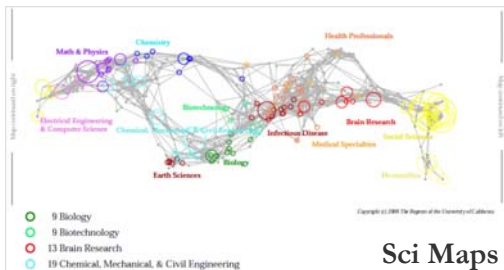
Video and paper are at <http://www.scivee.tv/node/27704>



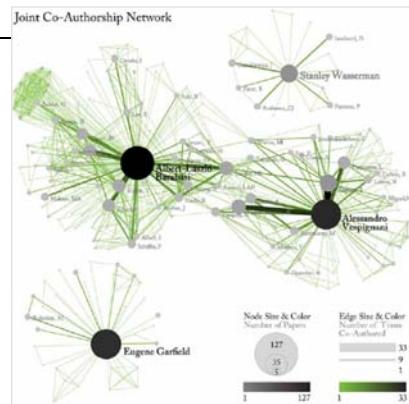
Sci² Tool – “Open Code for S&T Assessment”

<http://sci2.cns.iu.edu>

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

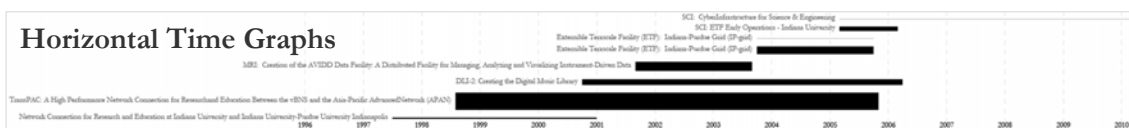


Sci Maps



GUESS Network Vis

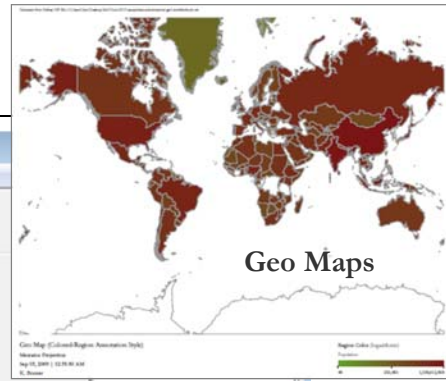
Horizontal Time Graphs



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



Sci² Tool



Sci² Tool

File Preprocessing Modeling Analysis Visualization Scientometrics Help

Console

Welcome to the Science of Science Tool (Sci²). The development of this tool is supported in Network Science center and the School of Informatics at Indiana University, the National Science Foundation (NSF) grant IIS-0715303, and the James S. McDonnell Cyberinfrastructure portal (<http://sci.slis.indiana.edu>).

The primary investigators are Katy Börner, Ingrid Isenhardt, SciTech Strategies Inc. The Sci² tool was developed by J. Duhon, Patrick A. Phillips, Chintan Tank, a Cyberinfrastructure Shell (<http://cishell.org>) for Network Science Center (<http://cns.slis.indiana.edu>). Many algorithm plugins were derived from the Network Science Center (<http://nwb.slis.indiana.edu>).

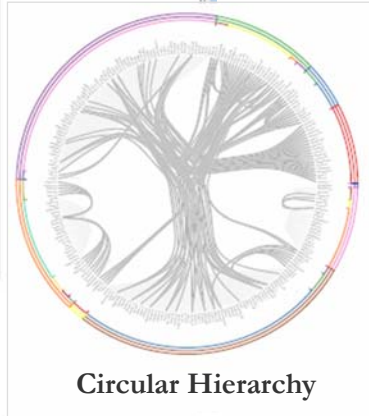
Please cite as follows:
Sci² Team. (2009). Science of Science Tool. Ingrid Isenhardt, SciTech Strategies Inc., <http://sci.slis.indiana.edu>.

Scheduler

Remove From List Remove completed

Algorithm Name	Date	Time	% Complete
<input checked="" type="checkbox"/> Extract Co-Author Network	09/03/2009	00:15:20 AM	100%
<input checked="" type="checkbox"/> Load and Clean ISI File	09/03/2009	00:15:05 AM	100%

- GUESS
- GnuPlot
- Radial Tree/Graph (prefuse alpha)
- Radial Tree/Graph with Annotation (prefuse beta)
- Tree View (prefuse beta)
- Tree Map (prefuse beta)
- Force Directed with Annotation (prefuse beta)
- Fruchterman-Reingold with Annotation (prefuse beta)
- DrL (VxOrd)
- Specified (prefuse beta)
- Horizontal Line Graph
- Circular Hierarchy
- Geo Map (circle annotations)
- Geo Map (region coloring annotations)
- Image Viewer
- RefMapper



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[®] AV
ANALYZER | VISUALIZER

DATA SETS

TEMPORAL ANALYSIS GEOSPATIAL ANALYSIS TOPICAL ANALYSIS NETWORK ANALYSIS

“WHEN” IS TEMPORAL ANALYSIS

“WHERE” IS GEOSPATIAL ANALYSIS

“WHAT” IS TOPICAL ANALYSIS

“WITH WHOM” IS NETWORK ANALYSIS

WHEN
WHERE
WHAT
WHOM



Sci² Tool Usage at National Institutes of Health

NETE A|V - Temporal Analysis

Find and select one or multiple PIs

1 CHOOSE A DATA SET 2 CHOOSE AN ANALYSIS 3 VISUALIZE

Choose the data set that you would like to visualize

Principal Investigators by Name

Principal Investigators by Organization

Organization : Include Co-PIs

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

29



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

1 CHOOSE A DATA SET 2 CHOOSE AN ANALYSIS 3 VISUALIZE

Choose an analysis that you would like to do:

All projects with award amounts

Top 20 projects by average award amount

All projects with award amounts by IC funding

All projects by PI

Start Fiscal Year: End Fiscal Year:

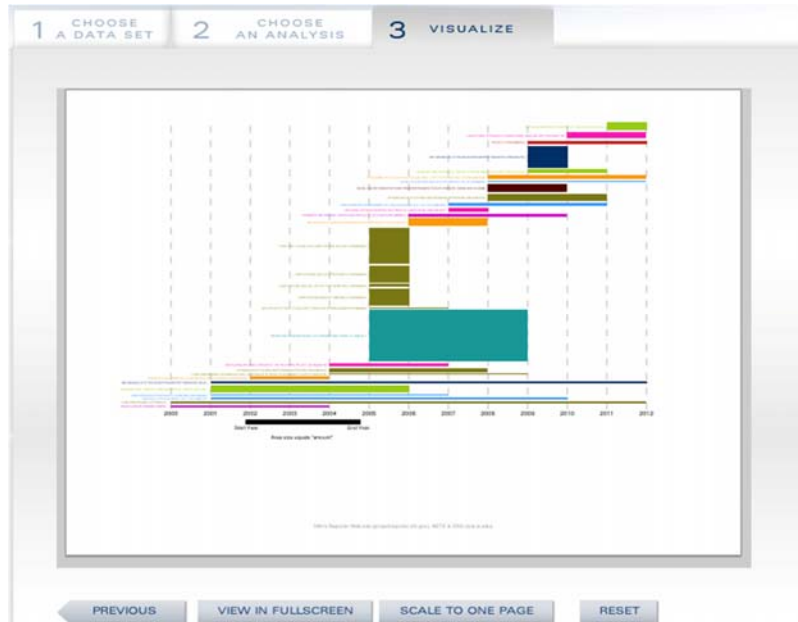
30



Sci² Tool Usage at National Institutes of Health

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

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

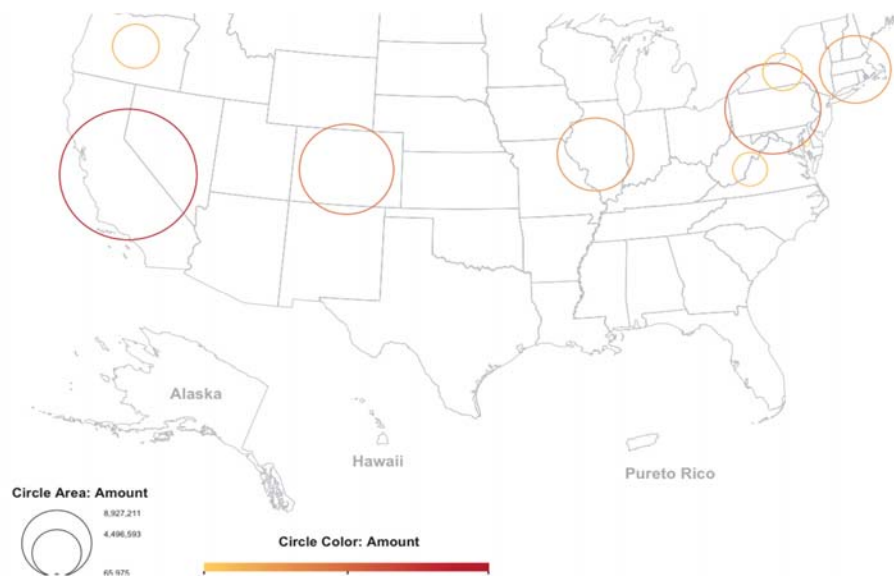


31



Sci² Tool Usage at National Institutes of Health

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

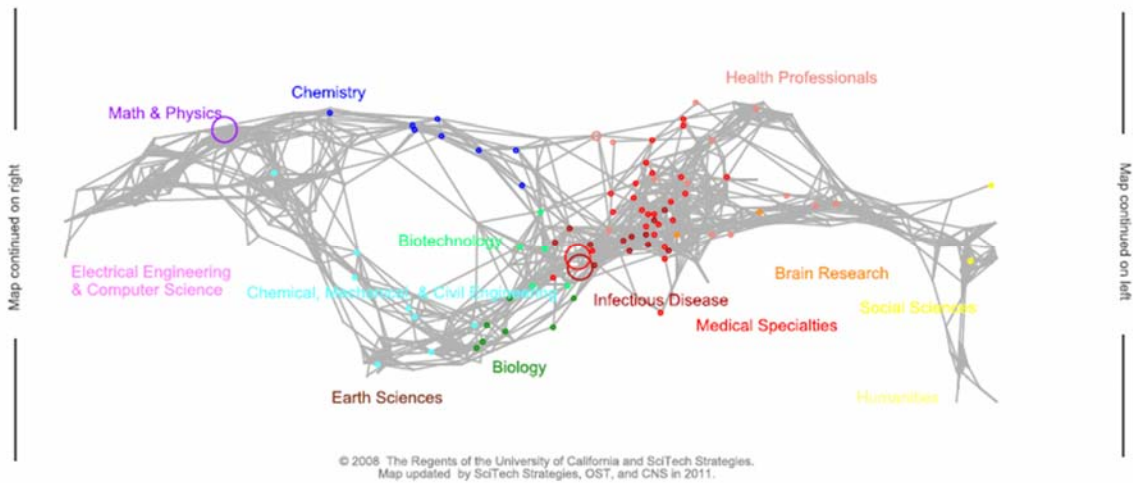


32



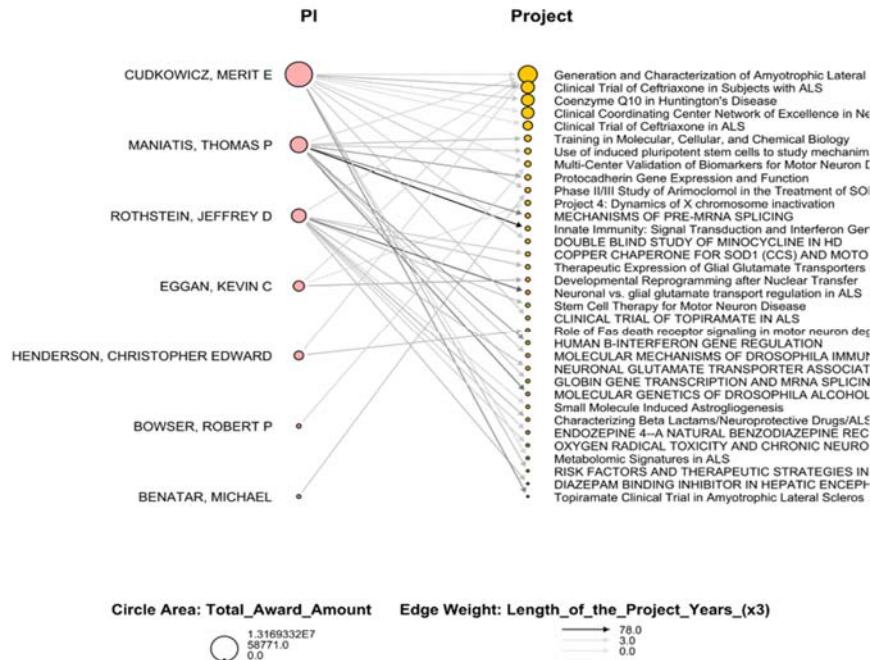
Sci² Tool Usage at National Institutes of Health

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

Information Visualization MOOC INDIANA UNIVERSITY CNS Cyberinfrastructure for Network Science Center

Home Schedule Announcements My Profile Forum Tools FAQ samueltolmanmills@gmail.com | Logout

Overview

This course provides an overview about the state of the art in information visualization. It teaches the process of producing effective visualizations that take the needs of users into account.

Among other topics, the course covers:

- Data analysis algorithms that enable extraction of relationships in data
- Major visualization and interaction techniques
- Discussions of systems that drive research and development.

A certificate will be issued upon successful completion. Please watch the introduction video to get better acquainted with the course.

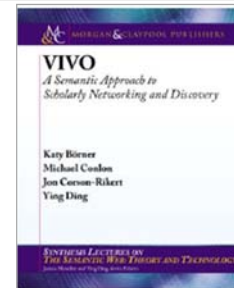
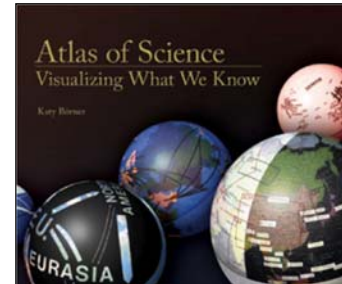
Katy Börner, Ph.D.
Indiana University

COMMUNICATIONS OF THE ACM
Börner, Katy. (March 2011). Plug-and-Play Macroscopes. *Communications of the ACM*, 54(3). <http://www.acm.org/node/27704>

Sign Up For The Course

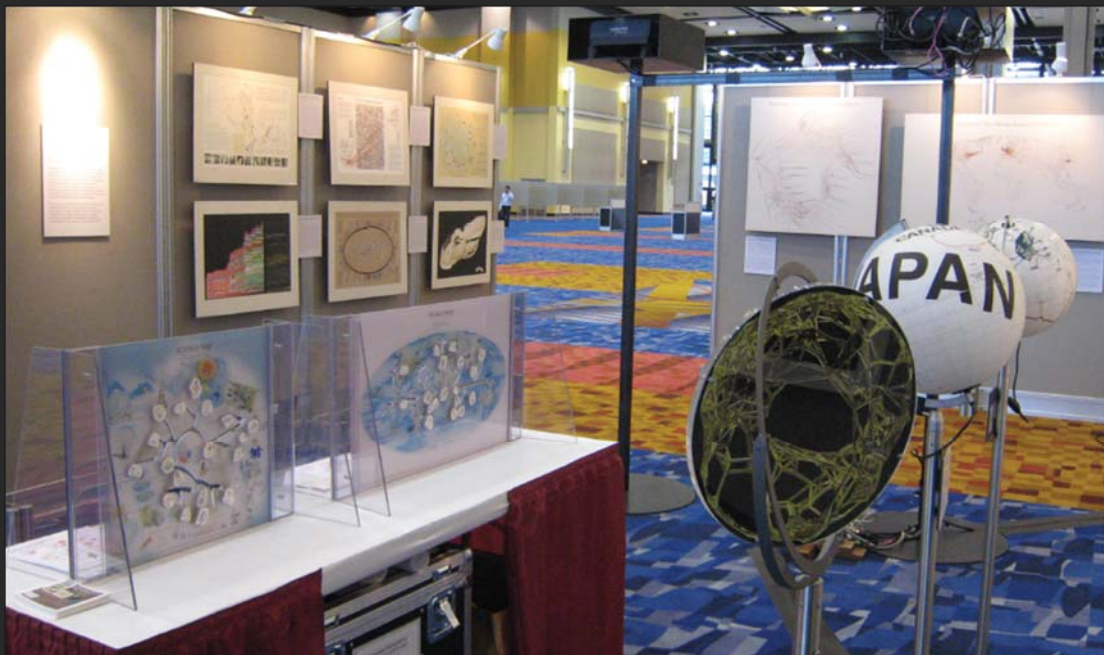
References

- 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.



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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>

Geographic Map: Where Science Gets Done

Science Map: How Scientific Disciplines Relate

About

This Illuminated Diagram display adds the flexibility of an interactive program to the incredibly high data density of a print. This technique is generally useful when there is too much pertinent data to be displayed on a screen but the data is relatively stable. The computer can direct the eye to what's important by using projectors or screens as smart spotlights, animating the research impact of individuals, giving a "grand tour" of science, or highlighting query results (as when you touch the ledem or use the keyboard) with an overlay of moving light.

Top Five Continents

- North America - 4,000 records
- South & East Asia - 3,589
- Australia - 2,431
- Africa - 2,208
- South America - 1,562

Top Five Scientific Disciplines

- Math & Physics - 4,000 records
- Health Professions - 3,589
- Social Sciences - 2,431
- Aeronautical, Chemical, Mechanical & Civil Engineering - 2,208
- Humanities - 1,562

Search

The keyboard supports retrieval and display of papers based on their Medical Subject Headings (MeSH) and MeSH qualifier terms. If multiple terms are entered in a field, they are automatically combined using "OR". So, "breast cancer" matches any record with "breast" or "cancer" in that field. You can put AND between terms to combine with "AND". Thus "breast AND cancer" would only match records that contain both terms. Double quotation can be used to match compound terms, e.g., "breast cancer" retrieves records with the phrase "breast cancer", and not records where "breast" and "cancer" are both present, but the exact phrase.

Q	W	E	R	T	Y	U	I	O	P
A	S	D	F	G	H	J	K	L	"
Z	X	C	V	B	N	M			
Space									Go

<http://scimaps.org>

People & Topics

Geographic Map: Where Science Gets Done

Science Map: How Scientific Disciplines Relate

About

This Illuminated Diagram display adds the flexibility of an interactive program to the incredibly high data density of a print. This technique is generally useful when there is too much pertinent data to be displayed on a screen but the data is relatively stable. The computer can direct the eye to what's important by using projectors or screens as smart spotlights, animating the research impact of individuals, giving a "grand tour" of science, or highlighting query results (as when you touch the lectern or use the keyboard) with an overlay of moving light.

Elinor Ostrom - Nobel Prize in Economic Sciences 2009

Born: 7 August 1933, New York, NY, USA
Affiliation at the time of the award: Indiana University, Bloomington, IN, USA, Arizona State University, Tempe, AZ, USA
Prize motivation: "for her analysis of economic governance, especially the commons"
Field: Economic governance
Contribution: Challenged the conventional wisdom by demonstrating how local property can be successfully managed by local commons without any regulation by central authorities or privatization.

Cancer	Cloning	HIV	Robert G. Edwards	Roger D. Kornberg	Elinor Ostrom
Obesity	Quality of Life	Smoking	Stanley B. Prusiner	Ahmed H. Zewail	View All

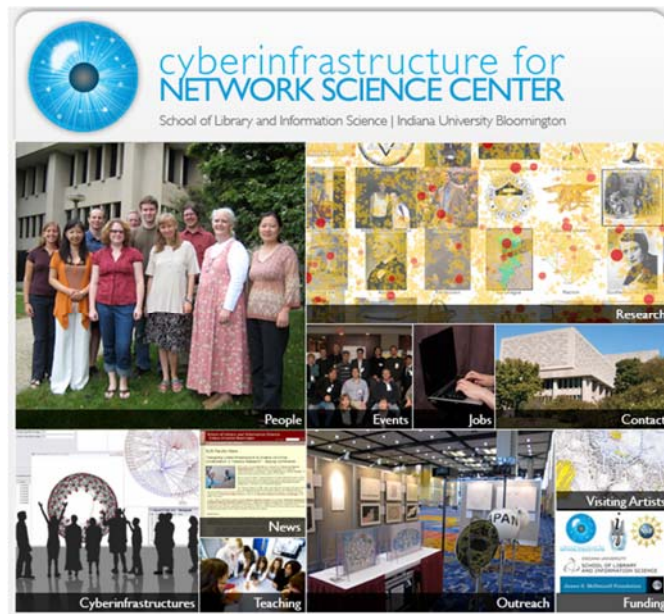
Keyword Search

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12-Tokyo-Worldprocessor
⌵

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>

CNS Facebook: <http://www.facebook.com/cnscenter>

Mapping Science Exhibit Facebook: <http://www.facebook.com/mappingscience>