

# Online Interactive Maps

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

*Statewide IT Conference at Indiana University  
Bloomington, IN*

*September 24, 2012*



Take terra bytes of data

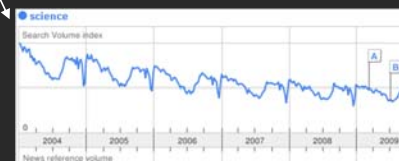
Black  
Box



Find your way



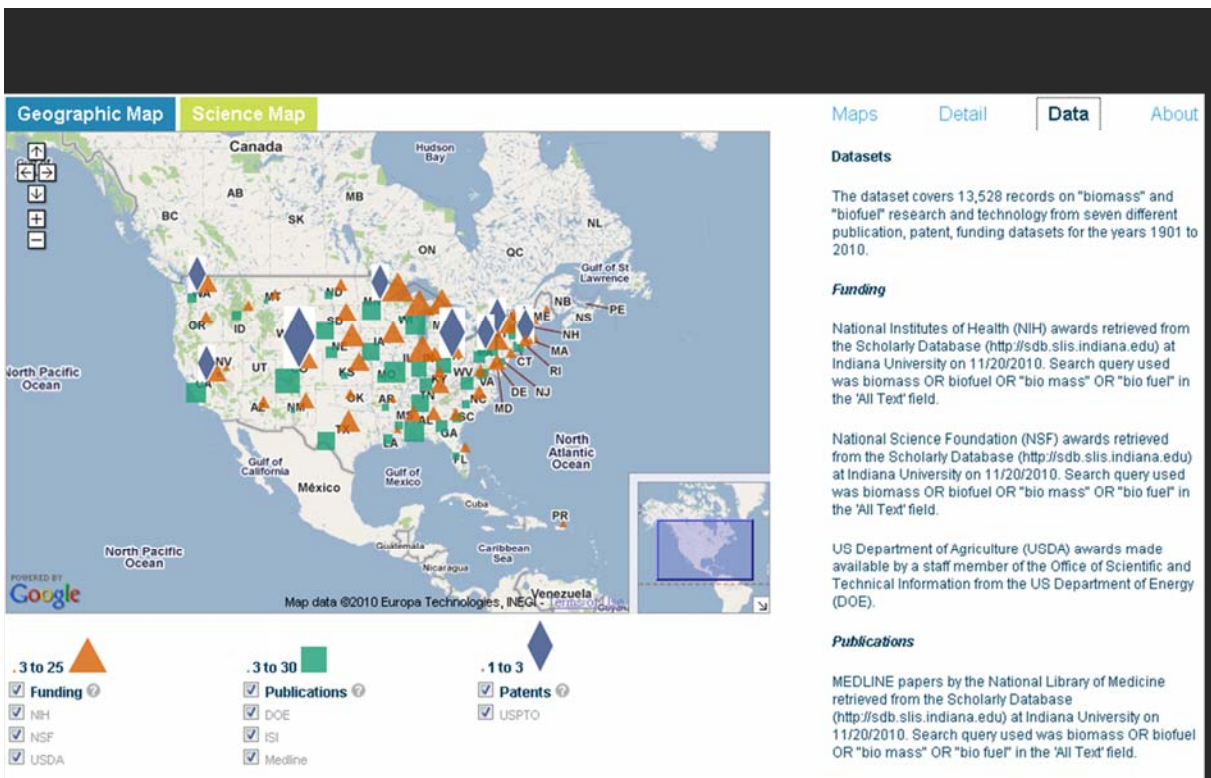
Find collaborators, friends



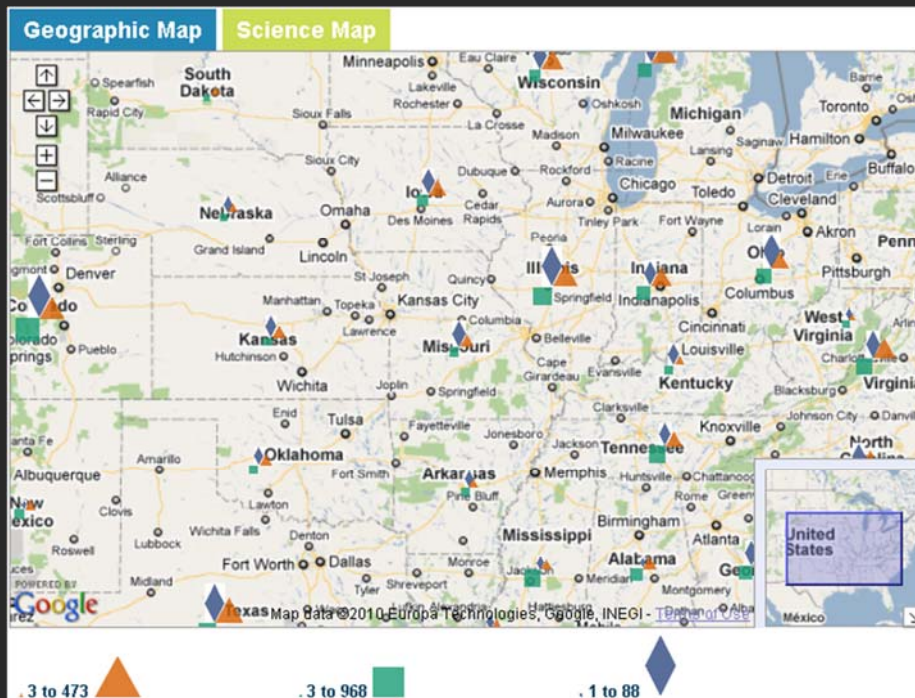
Identify trends



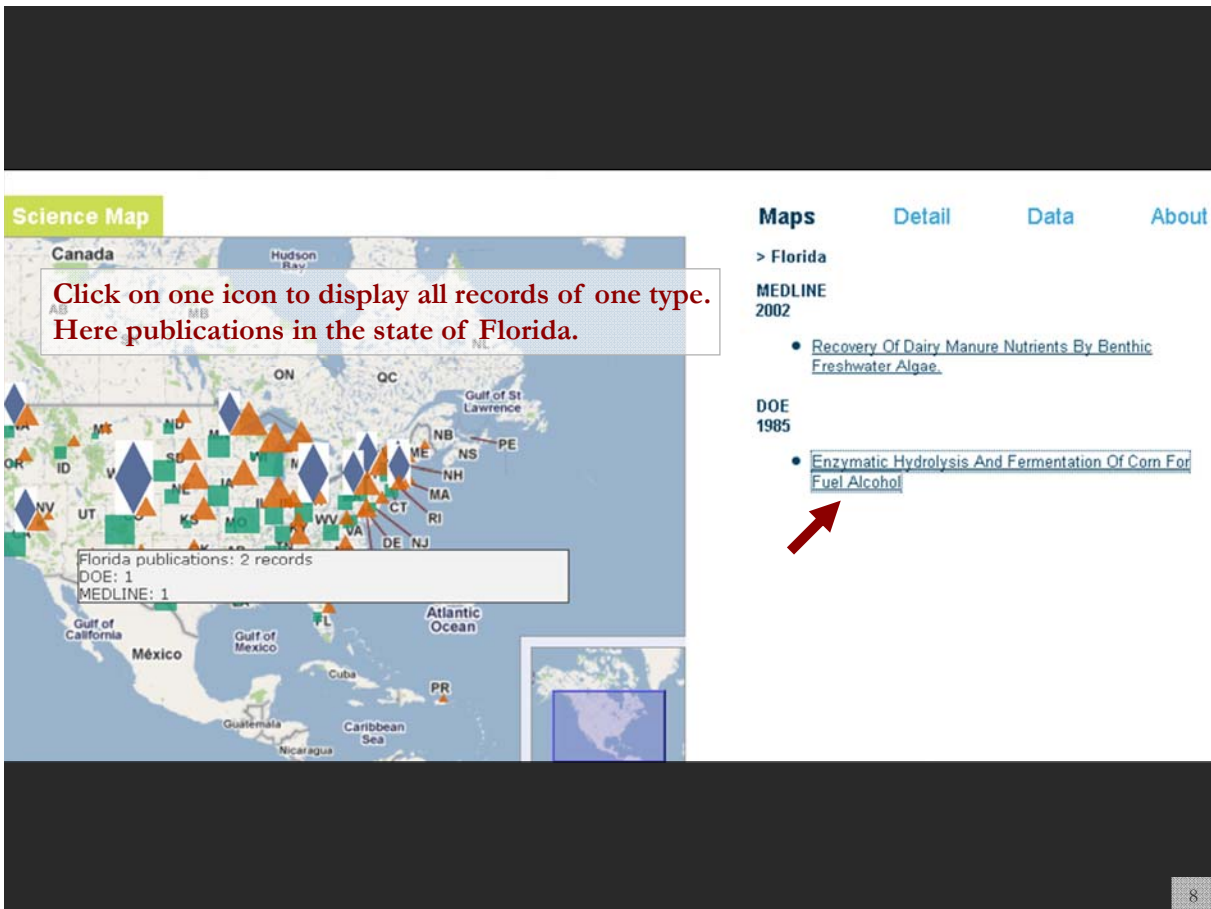
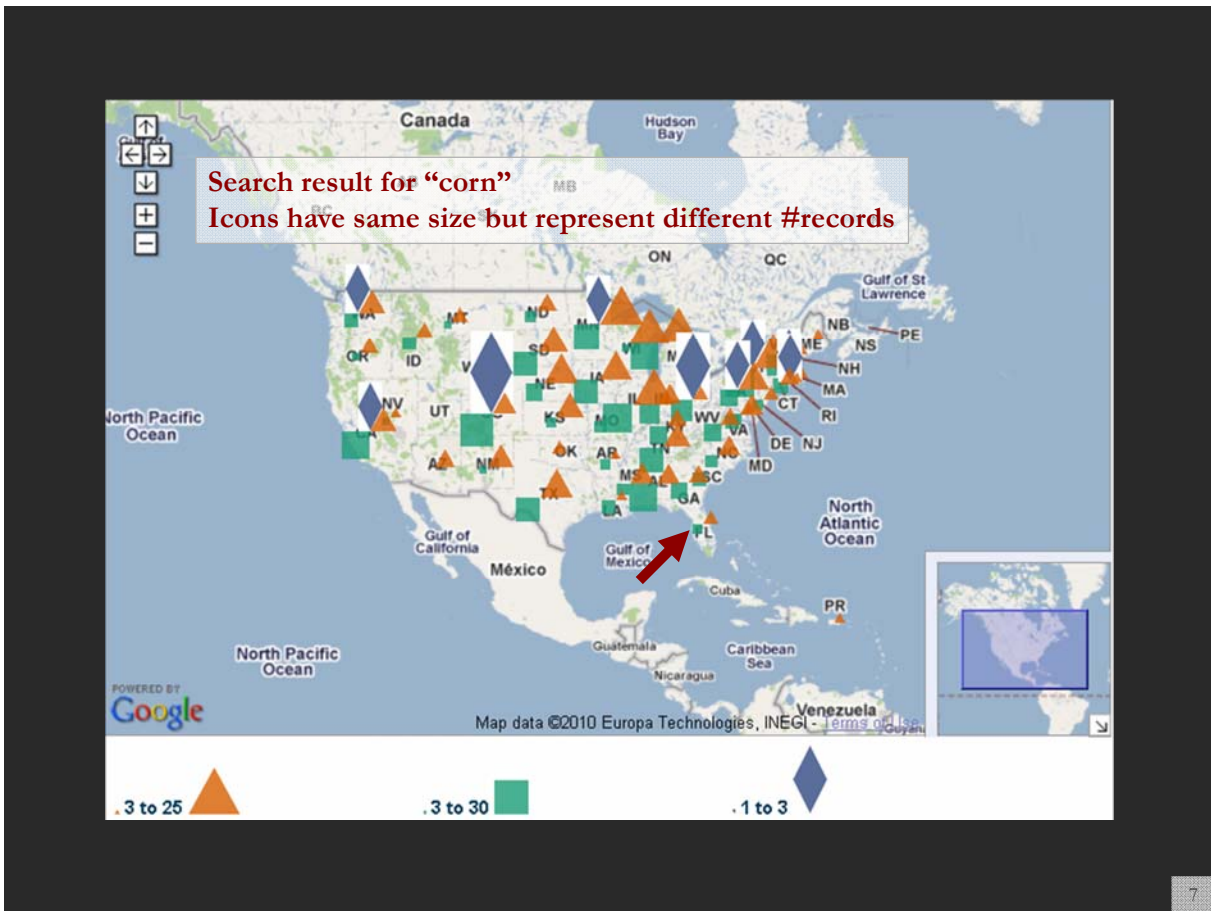




The geographic map at state level.



The geographic map at city level.





Information Bridge: DOE Scientific and Technical Information - - Document #5789929 - Mozilla Firefox

http://www.osti.gov/bridge/product.biblio.jsp?osti\_id=5789929

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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.

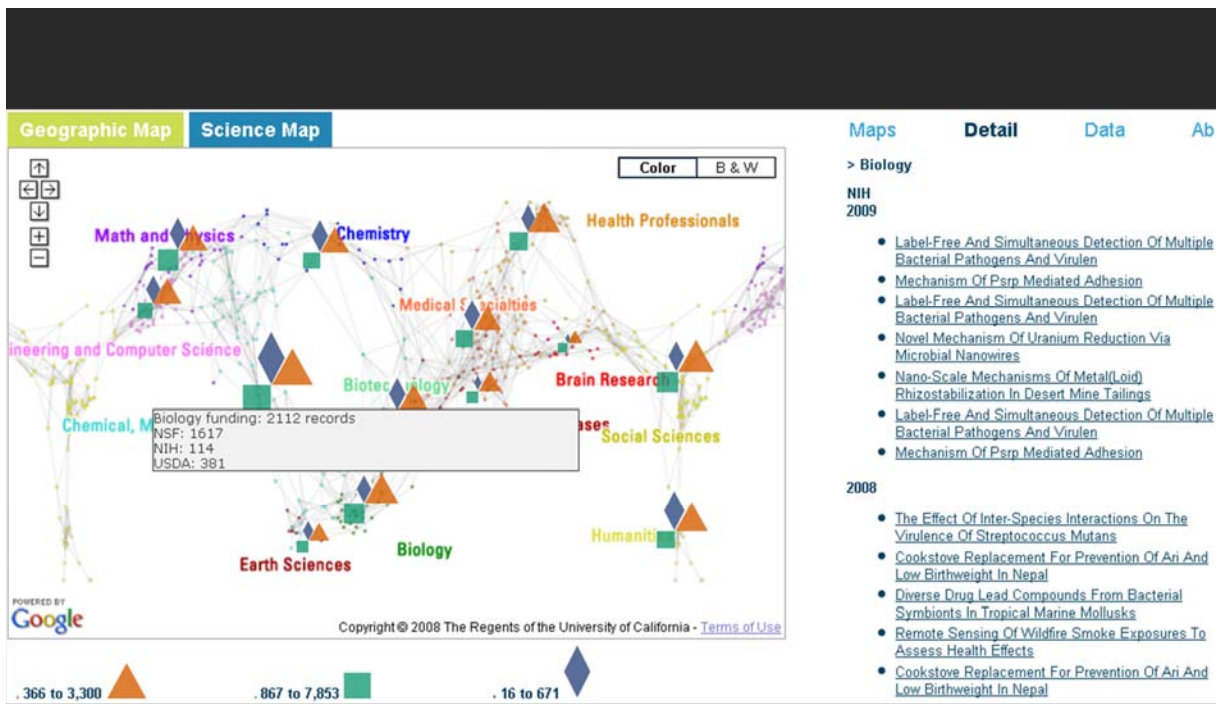
**Geographic Map** **Science Map**

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

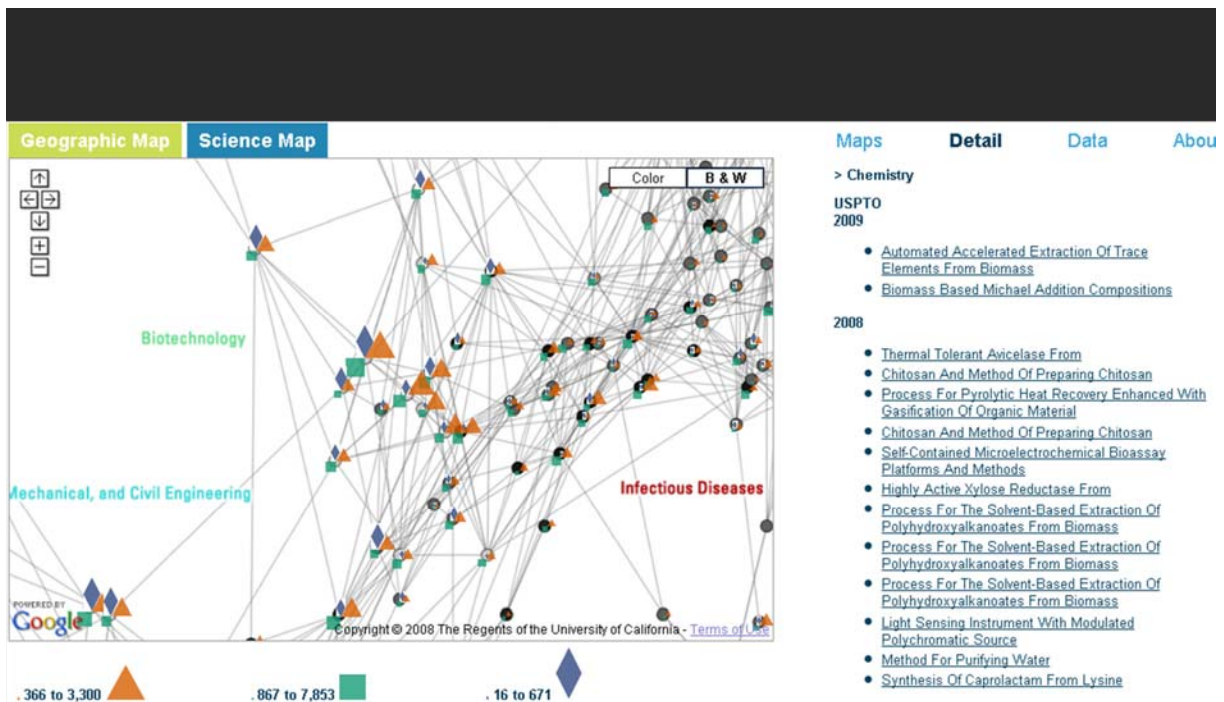
POWERED BY Google

Map data ©2010 Europa Technologies, INEGI

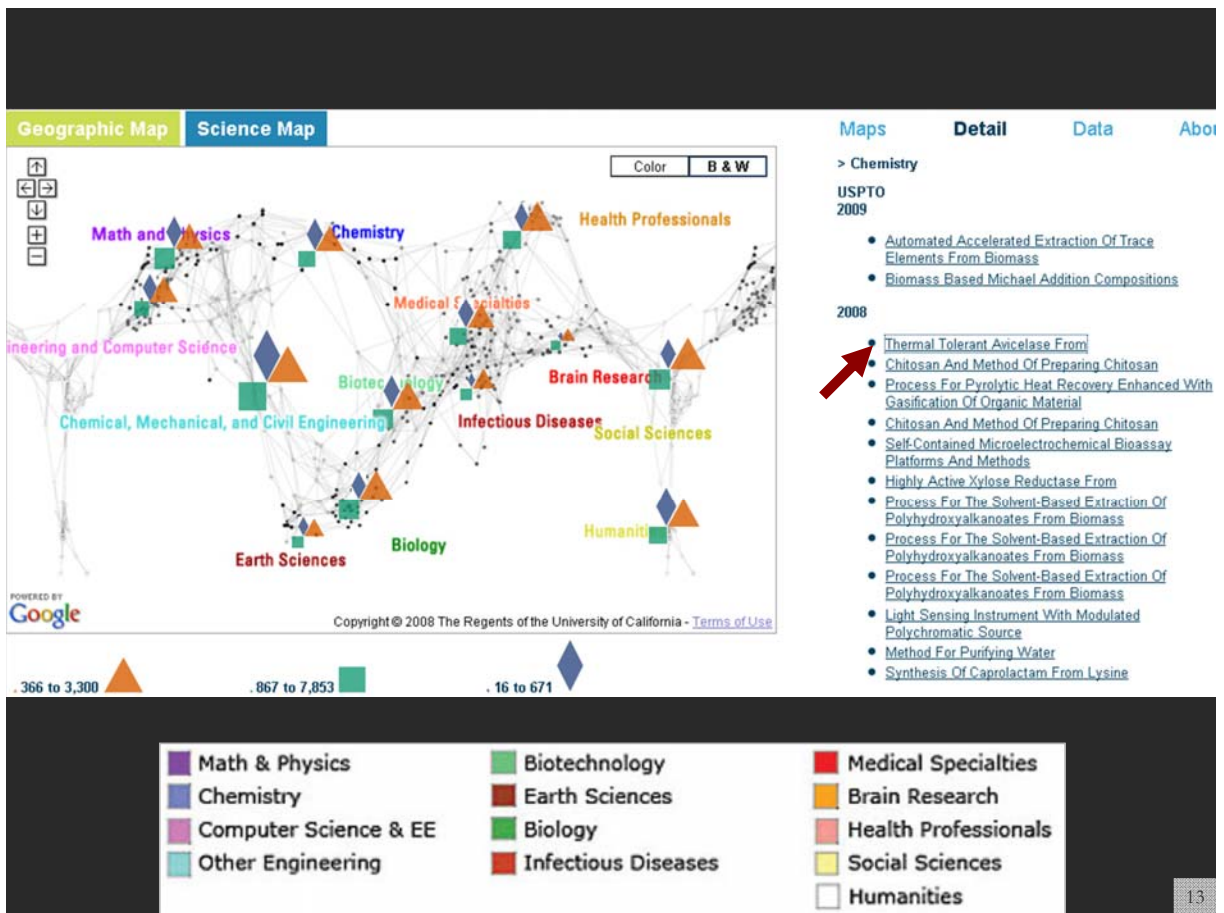
2 to 2 (Orange Triangle) .3 to 4 (Green Square) .0 to 0 (Blue Diamond)



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

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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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Clinical Trial Testing

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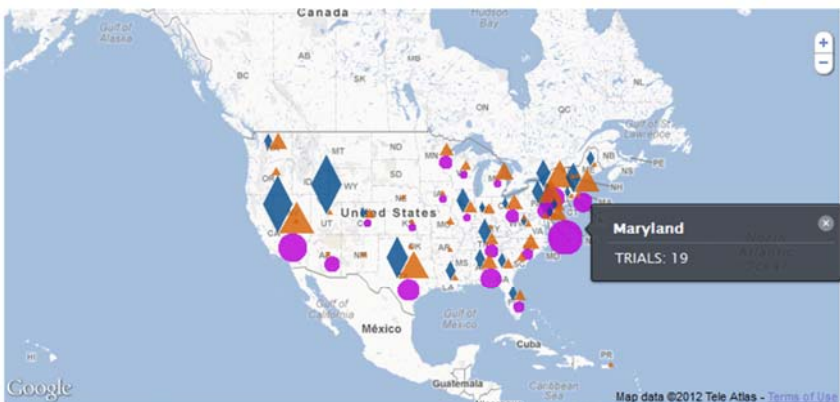
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## Gene Therapy Geographic Data Map



Funding  
 NH  
 NSF

Publications  
 Medline

Patents  
 USPTO

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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user name:

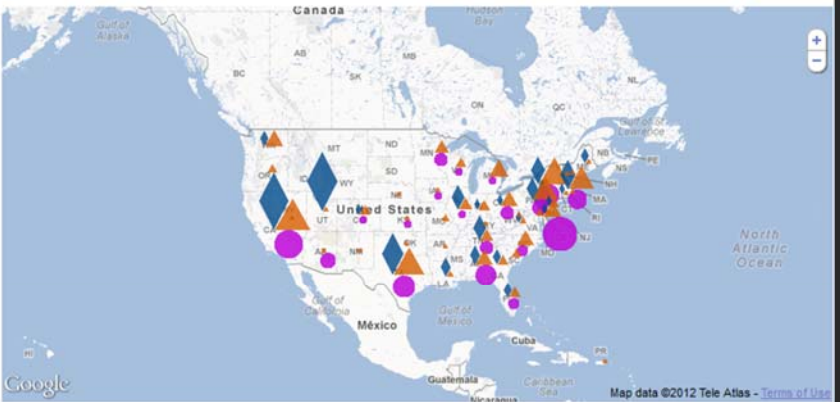
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## Gene Therapy Geographic Data Map



Funding  
 NH  
 NSF

Publications  
 Medline

Patents  
 USPTO

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

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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:	<a href="#">National Cancer Institute (NCI)</a>
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](#)

**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	

**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	3R01CA120562-03 Commonly Used Medications and Breast Cancer Recurrence PI: BOUDREAU, DENISE M	
NCI	3R01CA093772-06 Long-term Survivorship in Older Women with Early Stage Breast	

**Settings**

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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](#)
[NINR](#)
[NIDCD](#)
[NINDS](#)
[NIA](#)
[NCMHD](#)
[NIAMS](#)
[NIH](#)
[NIDDK](#)
[NHLBI](#)
[NIAAA](#)
[NIMH](#)
[NHGRI](#)
[FIC](#)
[NIBIB](#)
[NIDCR](#)
[NCRR](#)
[NIAID](#)
[NIDA](#)

Institute: NCI - National Cancer Institute

Export Data

### Top Topics

%	Topic	Topic Words	Title Words	Phrases
4.05	<a href="#">210</a>	cancer cancer_center program cancer_research	cancer_center, program, cancer, core, spore, tre	anderson cancer_center, shared resource, canc
2.42	<a href="#">597</a>	cancer tumor tumorigenesis tumors myc tumor_	cancer, tumorigenesis, myc, tumor_suppressor,	tumor progression, malignant transformation, tu
2.28	<a href="#">430</a>	cancer treatment therapy patients tumor diseas	cancer, therapy, treatment, tumor, prostate, bre	cancer treatment, treatment cancer, metastatic
1.73	<a href="#">16</a>	metastasis invasion tumor metastatic progressi	metastasis, cancer, invasion, breast, tumor, pro	tumor progression, invasion metastasis, cancer
1.47	<a href="#">345</a>	clinical_trials trials oncology cancer treatment cli	clinical_trials, clinical_oncology, oncology, unit, p	clinical_trials unit, phase_j clinical_trials, cancer
1.43	<a href="#">686</a>	cancer breast cancers cancer_risk cancer_patien	breast, cancer, cancer_risk, women, cancer_sur	breast cancer, breast cancer_risk, breast cancer
1.41	<a href="#">370</a>	tumor immunotherapy t_cells t_cell immunity an	tumor, immunotherapy, t_cell, immunity, t_cells,	antitumor immunity, adoptive immunotherapy, t
1.14	<a href="#">480</a>	therapeutic agents treatment therapies targets	therapeutic, targeting, agents, treatment, there	therapeutic agents, therapeutic targets, therap
1.08	<a href="#">346</a>	biomarkers markers biomarker disease patients	biomarkers, biomarker, markers, disease, cancer	disease progression, biomarker validation, seru
0.98	<a href="#">660</a>	prostate cancer pca cancer_cells incap androge	prostate, cancer, cancer_cells, androgen_recep	prostate cancer, prostate cancer_cells, prostate
0.90	<a href="#">171</a>	scientific committee administrative management	core, administrative, administration, planning, a	steering committee, internal external, institutor
0.87	<a href="#">182</a>	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	<a href="#">437</a>	risk risk_factors cases cohort prospective high_r	risk, risk_factors, cancer, prospective, women, e	cases controls, prospective cohort_study, modif
0.85	<a href="#">23</a>	tumor tumors tumor_growth mice treatment tun	tumor, tumors, cancer, tumor_growth, targeting	tumor regression, tumor burden, tumor progres
0.85	<a href="#">695</a>	core statistical projects biostatistics investigat	core, biostatistics, data_management, bioinform	biostatistics core, projects core, data_managem
0.79	<a href="#">603</a>	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	<a href="#">3P20RR011792-10S2</a>	OBESITY, INSULIN RESISTANCE, IGF'S, AND BREAST CANCER RISK IN AFRICAN AMERICANS	CUI, YONG	686	cancer brea...	NCI	116	
	NCI	<a href="#">3R01CA120562-03S1</a>	Commonly Used Medications and Breast Cancer Recurrence	BOUDREAU, DENISE M	686	cancer brea...	NCRR	10	
	NCI	<a href="#">5R01CA120562-03</a>	Commonly Used Medications and Breast Cancer Recurrence	BOUDREAU, DENISE M	686	cancer brea...	NIEHS	5	
	NCI	<a href="#">5R01CA093772-06</a>	Long-term Survivorship in Older Women with Early Stage Breast Cancer	SILLIMAN, REBECCA A	686	cancer brea...	NCMHD	1	
	NCI	<a href="#">5R01CA064277-11</a>	Shanghai Breast Cancer Study	ZHENG, WEI	686	cancer brea...	NIA	1	
							NCCAM	1	
							NIDCD	1	
							NINR	1	
							NHGRI	1	

### Topics

### Similar Grants

Show Top 100 on Map

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

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# NIH TOPIC MAPS

## A Topic Database of NIH-Funded Grants

3P20RR011792-10S2 6914

Map Viewer

Topic Browser

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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

<b>NIH Reporting Categories</b>
Breast Cancer... Cancer... Obesity
<b>NIH Concept Keywords</b>
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	<a href="#">3K22CA127519-03S1</a>	Beyond Adiposity: Insulin and Inflammation in Postmenopausal Breast Cancer	NUNEZ, NOMELI PANIAGUA	686 (33%)	cancer breast...
0.54	NCI	<a href="#">5K22CA127519-03</a>	Beyond Adiposity: Insulin and Inflammation in Postmenopausal Breast Cancer	NUNEZ, NOMELI PANIAGUA	686 (33%)	cancer breast...
0.48	NCI	<a href="#">5R01CA128799-02</a>	Mechanisms for Increased Breast Cancer Risk in Type 2 Diabetes	LEROITH, DEREK	66 (17%)	diabetes diab...
0.48	NCI	<a href="#">3P30CA013696-36S2 0007</a>	BREAST CANCER RESEARCH	PARSONS, RAMON E	210 (40%)	cancer cancer...
0.48	NCI	<a href="#">3P30CA013696-36S3 0007</a>	BREAST CANCER RESEARCH	PARSONS, RAMON E	210 (40%)	cancer cancer...

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# NIH TOPIC MAPS

## A Topic Database of NIH-Funded Grants

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2009

add

delete

AND

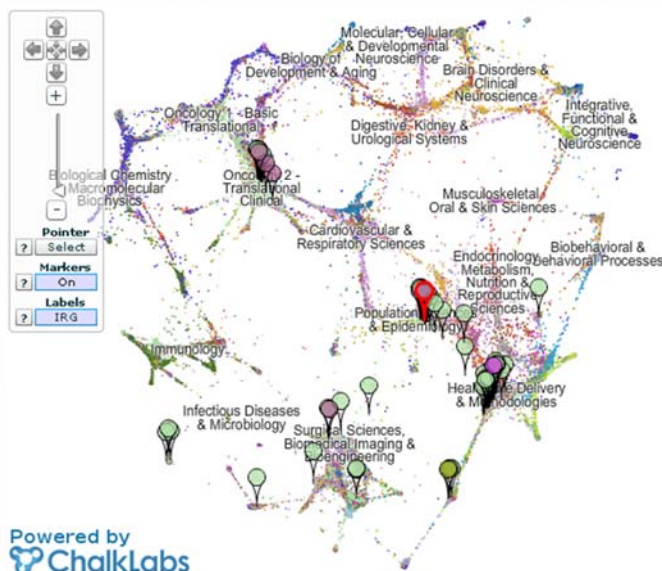
Related Grants

7960745

Top 100

Search

Clear Search



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- FIC
- NCCAM
- NCI
- NCMHD
- NCCR
- NEI
- NHGRI
- NHLBI
- NIA
- NIAAA
- NIAID
- NIAAMS
- 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

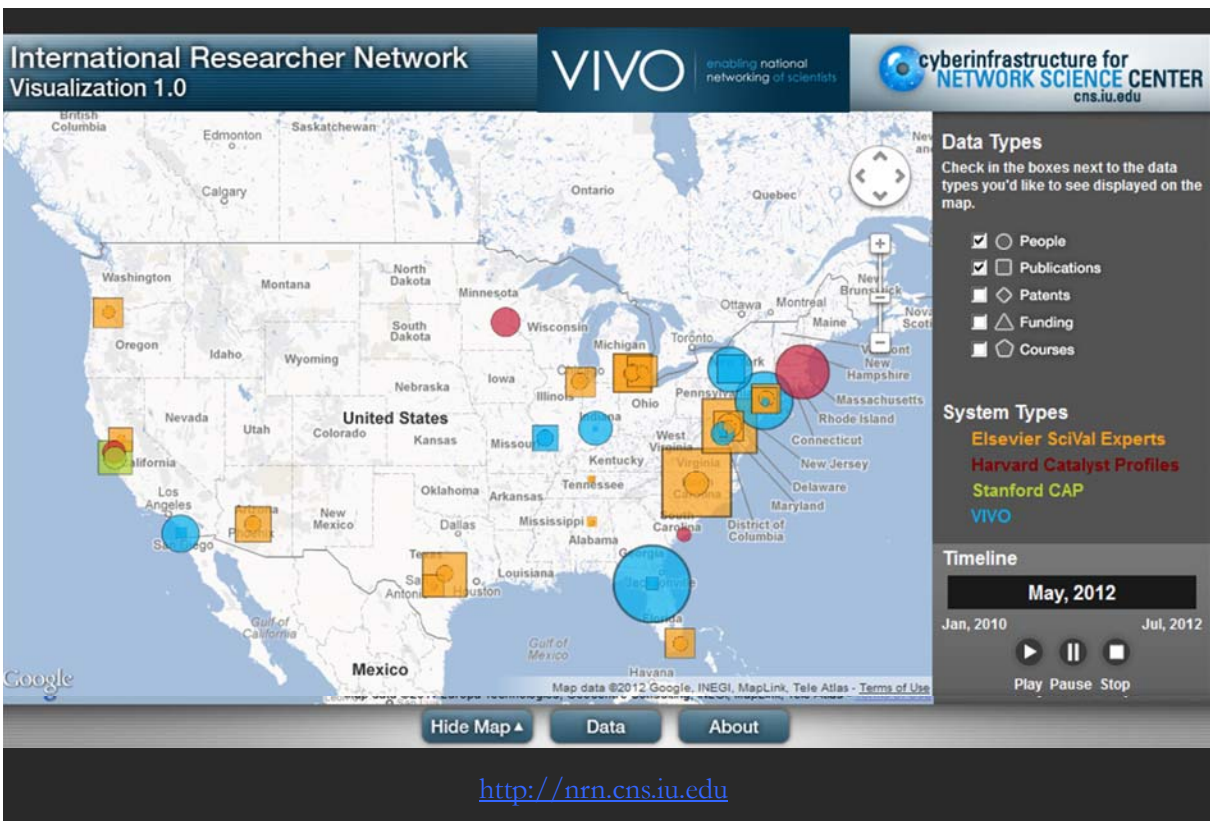
%	Title	Words
14.7%	breast, cancer, cancer_risk, women, cancer_sui	
11.0%	breast, mammography, mammographic, canc	
9.60%	risk, risk_factors, cancer, prospective, women,	
3.23%	genome_wide_association, lod, genome_wide,	

#### Grants (101)

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

<https://app.nihmaps.org>

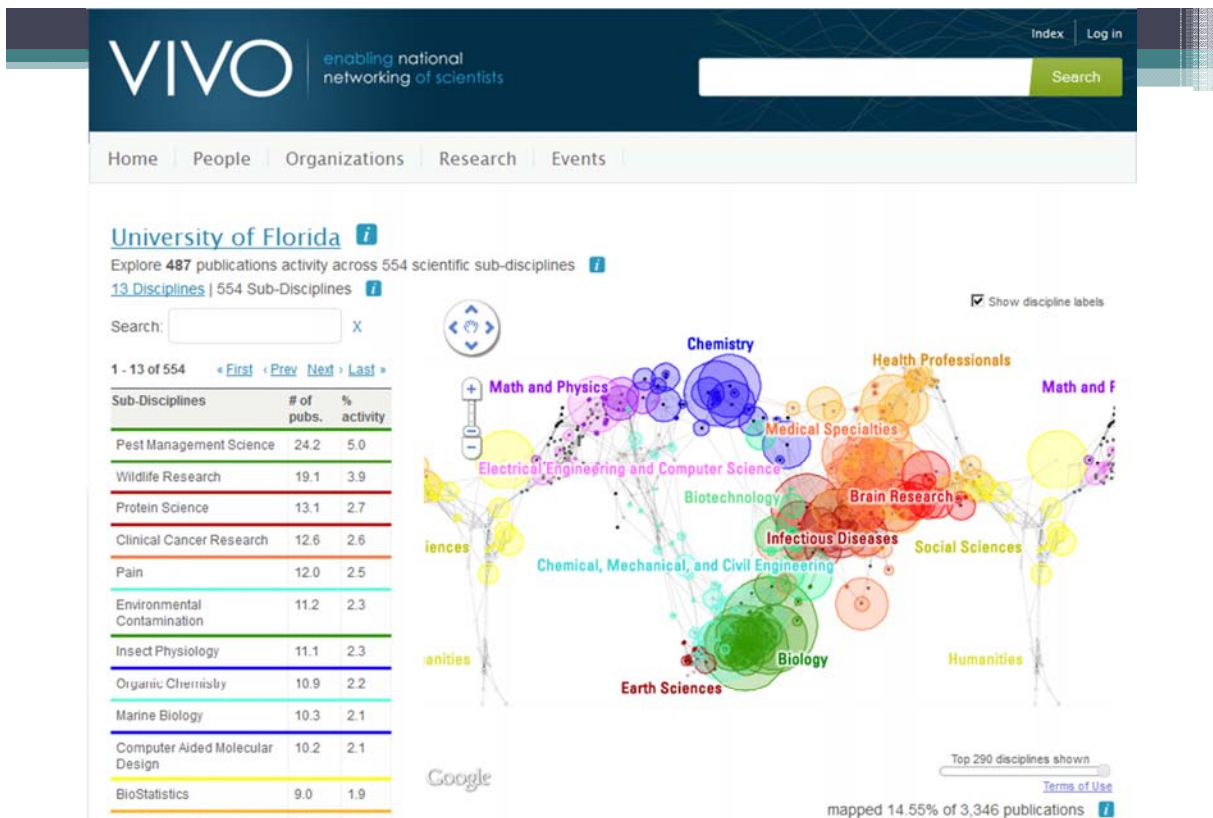
22



<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



## Related Talks

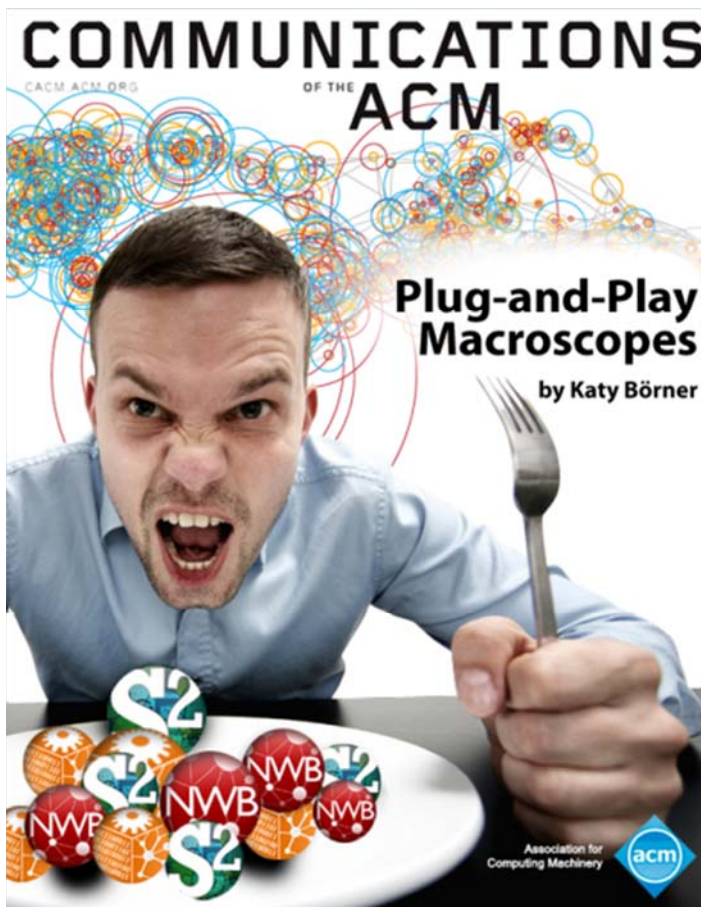


### Monday

3:30pm	<b>Online Interactive Map: Say goodbye to tabular representation</b> Chin Hua Kong and Katy Börner	The Research Superhighway	Oak room	Monday 3:30 - 4pm
5pm	<b>Places &amp; Spaces: Mapping Science</b> Katy Börner, Michael Stamper, and Samantha Hale	The Human Element	Oak room	Monday 5 - 5:30pm

### Tuesday

9:30am	<b>Plug-and-play visualization with the Science of Science Tool</b> David Polley, Chin Hua Kong, and Katy Börner	The Research Superhighway	Walnut room	Tuesday 9:30 - 10am
11:30am	<b>VIVO@IU: An overview</b> Robert Light, Chin Hua Kong, and Katy Börner	The Research Superhighway	Oak room	Tuesday 11:30 - 12pm



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

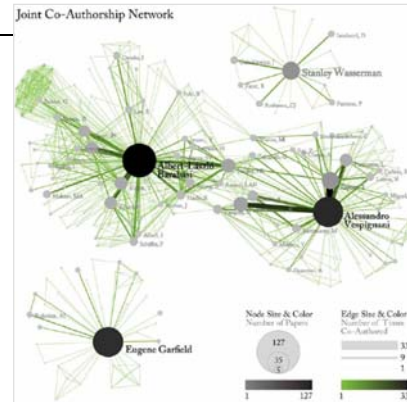
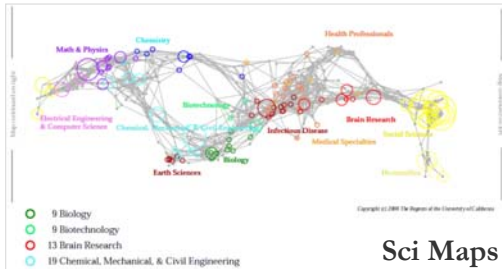
Video and paper are at <http://www.scivee.tv/node/27704>



## 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.



## Horizontal Time Graphs



Börner, Katy, Huang, Weixia (Bonnie), Linnemeier, Micah, Dubon, 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

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 Li Indiana University, the National Science Foundation and IIS-0715303, and the James S. McDonnell Cyberinfrastructure portal (<http://sci.slis.indiana.edu>).

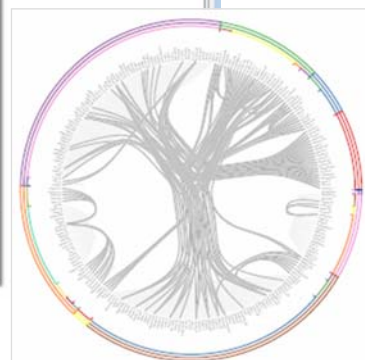
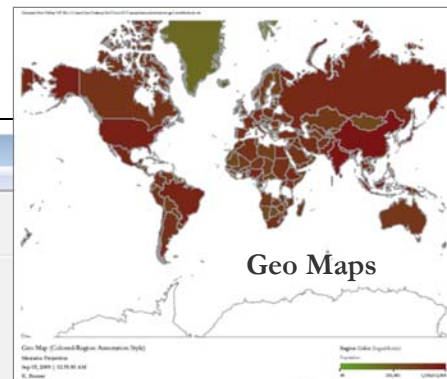
The primary investigators are Katy Börner, In SciTech Strategies Inc. The Sci² tool was developed by J. Duhon, Patrick A. Phillips, Chintan Tank, a Cyberinfrastructure Shell (<http://cishell.org>) for Network Science Center (<http://cns.slis.indiana.edu>). Many algorithm plugins were derived from the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

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

Scheduler

Remove From List  Remove completed

!	Algorithm Name	Date	Time	% Con
<input checked="" type="checkbox"/>	Extract Co-Author Netw...	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%







## Sci<sup>2</sup> 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<sup>®</sup> A|V**  
ANALYZER | VISUALIZER

DATA SETS ▶

TEMPORAL ANALYSIS    GEOSPATIAL ANALYSIS    TOPICAL ANALYSIS    NETWORK ANALYSIS

“When” questions are commonly addressed via temporal analyses  
 “Where” questions often involve the application of geospatial methods  
 “What” questions require topical analyses  
 “With whom” questions are often answered via network studies

WHEN  
 WHERE  
 WHAT  
 WHOM

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## Sci<sup>2</sup> 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

30



## Sci<sup>2</sup> 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:

PREVIOUS NEXT RESET

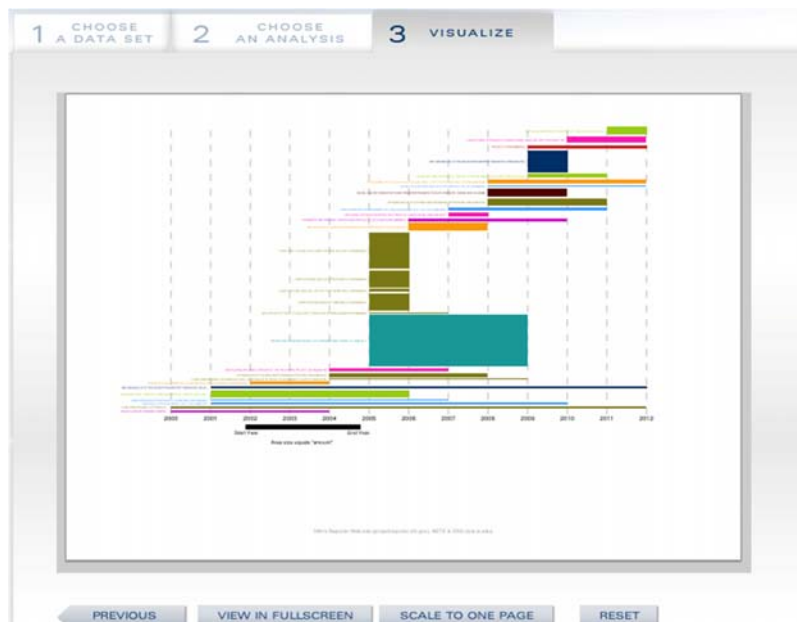
31



## Sci<sup>2</sup> 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



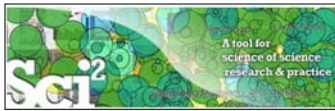
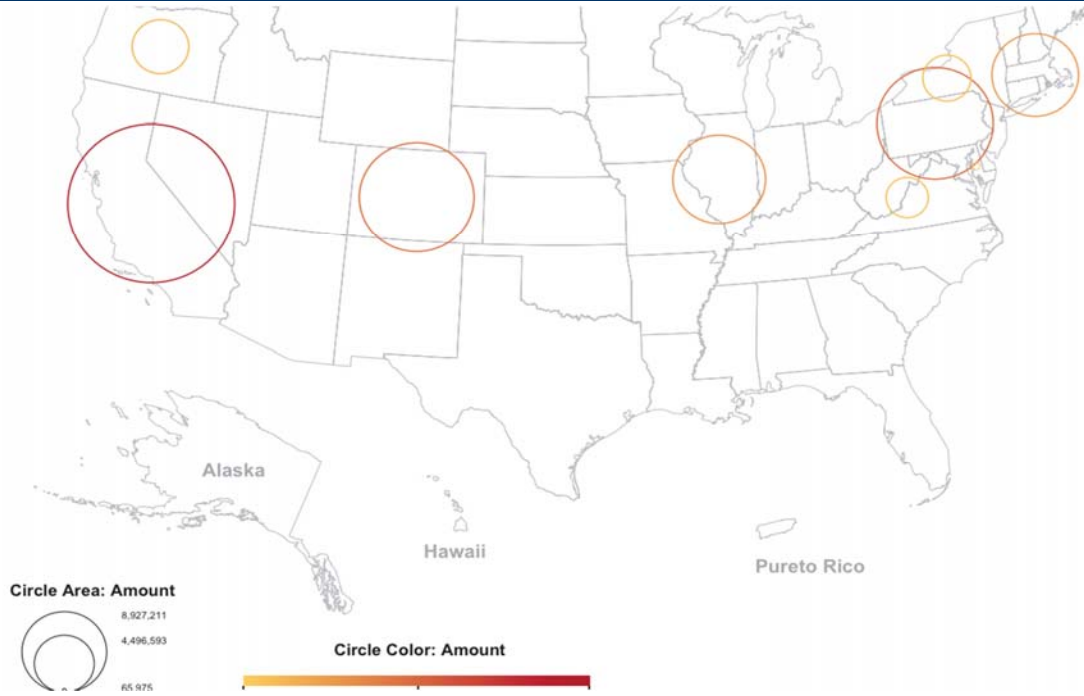
32





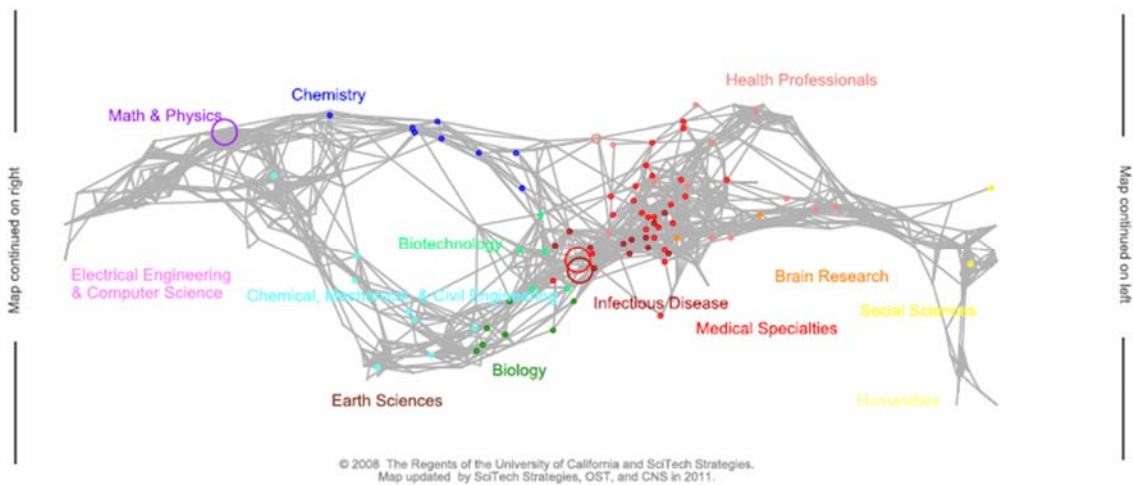
## Sci² Tool Usage at National Institutes of Health

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



## Sci² Tool Usage at National Institutes of Health

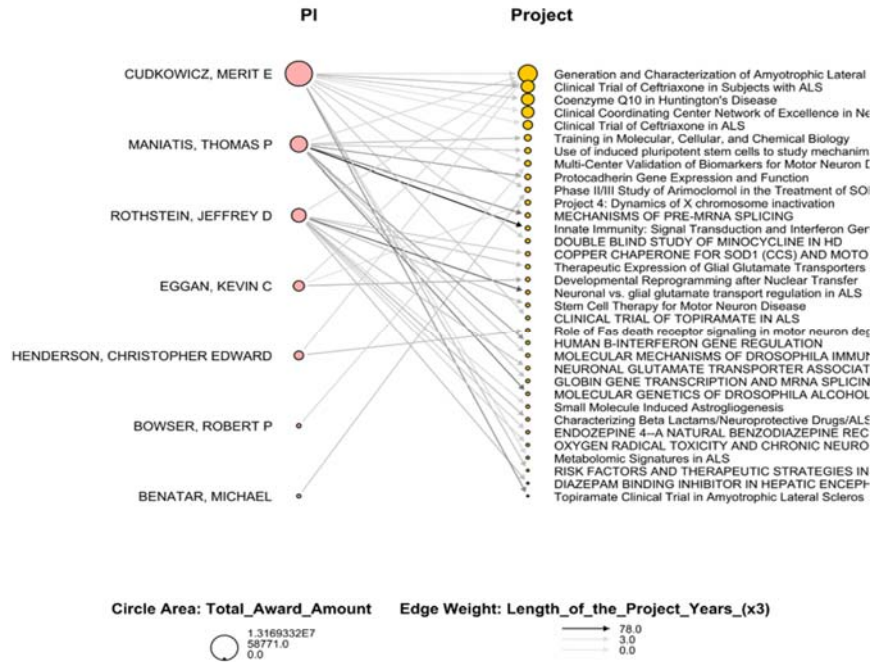
### NETE A|V – Topical Analysis – Publications in a Project Portfolio





# Sci² Tool Usage at National Institutes of Health

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



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### Related Talks



#### Monday

**3:30pm** **Online Interactive Map: Say goodbye to tabular representation**  
Chin Hua Kong and Katy Börner

The Research Superhighway    Oak room    Monday 3:30 - 4pm

**5pm** **Places & Spaces: Mapping Science**  
Katy Börner, Michael Stamper, and Samantha Hale

The Human Element    Oak room    Monday 5 - 5:30pm

#### Tuesday

**9:30am** **Plug-and-play visualization with the Science of Science Tool**  
David Polley, Chin Hua Kong, and Katy Börner

The Research Superhighway    Walnut room    Tuesday 9:30 - 10am

**11:30am** **VIVO@IU: An overview**  
Robert Light, Chin Hua Kong, and Katy Börner

The Research Superhighway    Oak room    Tuesday 11:30 - 12pm

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## 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/](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 (2011) **Models of Science Dynamics**. Springer Verlag.



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## We are Hiring!

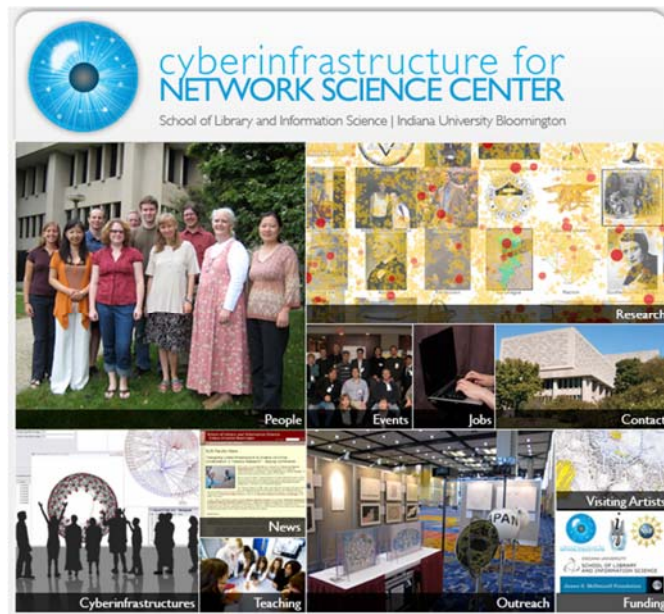
### Senior Software Engineer/Research Analyst (3IT) IU Job #6839

As Senior Software Engineer, you will perform research and programming for current and future externally funded research projects at the CNS Center. These projects include tools powered by the Cyberinfrastructure Shell (CIShell, <http://cishell.org>), an open-source software platform that supports the interchange of datasets and algorithms; MapIN, a map of Indiana's expertise and resources; and other online interactive maps and web sites. You will participate in the entire software development process, from the collection of user stories through planning, implementation, testing, deployment, and documentation. You will also be expected to participate in the training new developers, and the creation of educational material for workshops. As Senior Software Engineer, you will have a chance to help set the standards of our team in many areas, including code, teamwork, product direction, and process.

### Software Developer (2IT) IU Job #6862

As a Software Developer, you will work in a team of four to perform research and programming for current and future externally funded research projects at the CNS Center. The main focus will be on tools powered by the Cyberinfrastructure Shell (CIShell, <http://cishell.org>). CIShell is an open-source software platform, built on Java and OSGi that allows developers and scientists to easily exchange datasets and algorithms, and bundle them into custom tools that serve the particular needs of research communities. You will participate in the entire software development process, from the collection of user stories through planning, implementation, testing, deployment, and documentation.

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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>