

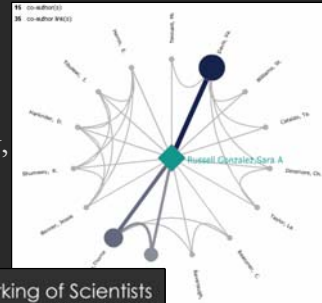
# VIVO Social Network Visualizations

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Micah Linnemeier (Social Networking Development Lead)  
Cyberinfrastructure for Network Science Center  
School of Library and Information Science  
Indiana University, Bloomington, IN  
[katy@indiana.edu](mailto:katy@indiana.edu)

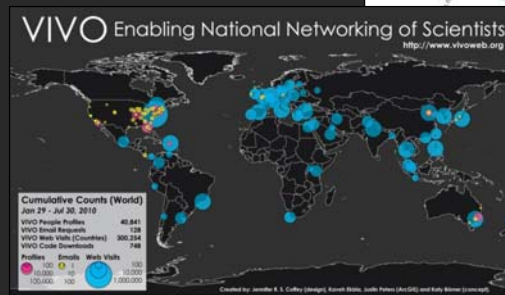


With special thanks to

- Visualization Developers: Chintan Tank, Deepak Konidena, Asik Gongaju, Chin Hua Kong, Joseph Biberstine
  - Graphic Designers: Michael Stamper, Elisha Hardy, Jennifer Coffey, Prianka Rayamajhi
  - Database Management and Processing Expert: Nianli Ma
- and the members at the Cyberinfrastructure for Network Science Center and the VIVO team.



*VIVO 18 months review*  
March 3, 2011



## Individual Level (Micro)

# Individual Level Co-Author Visualization

<http://vivo-vis.sls.indiana.edu/vivo1/display/n25562>

VIVO
enabling national networking of scientists

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People
Organizations
Research
Events

---

Conlon, Mike

[RDF](#)

[mconlon@ufl.edu](mailto:mconlon@ufl.edu)

3522738872

- [VIVO Home Page](#)
- [Clinical and Translational Science Institute Home Page](#)

## Conlon, Mike

Associate Director and Chief Operating Officer

### Positions

- [Clinical and Translational Science Institute](#), Faculty 2010 -
- [Clinical and Translational Science Institute](#), Associate Director and Chief Operating Officer 2010 -
- [Health Outcomes and Policy](#), Interim Division Chief, Biomedical Informatics 2009 -
- [Health Outcomes and Policy](#), Faculty 2008 -
- [Health Outcomes and Policy](#), Research Associate Professor 1992 -
- [Clinical and Translational Science Institute](#), Associate Director 2009 - 2010
- [Information Technology](#), Associate CIO, IT Architecture 2008 - 2010
- [Information Technology](#), Director of Data Infrastructure 2002 - 2010

**2 publications**  
within the last 10 years  
(5 total)

[Co-Author Network](#)

[Co-Investigator Network](#)

## Conlon, Mike

Associate Director and Chief Operating Officer



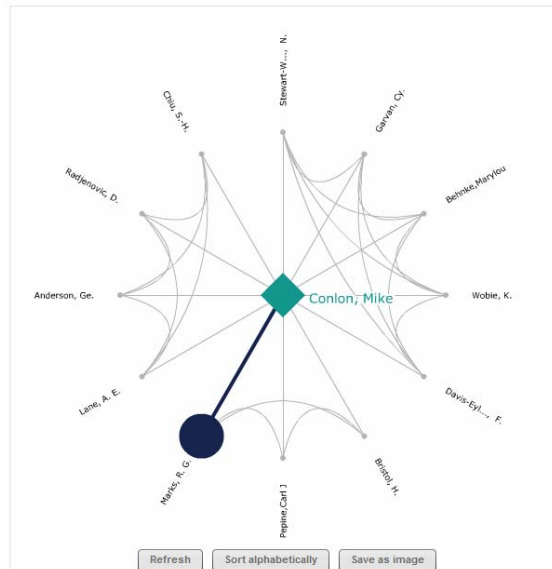
### Co-Author Network [\(GraphML File\)](#)

#### Profile

Conlon, Mike  
Associate Director and Chief O...  
[VIVO profile](#) | [Co-author network](#)

5 Publication(s)  
12 Co-author(s)  
1991 First Publication  
2004 Last Publication

Note: This information is based solely on publications which have been loaded into the VIVO system. This may only be a small sample of the person's total work.



**Interact**

Hover over any name to see the number of joint publications and co-authors with Conlon, Mike.

**Legend**

No. of co-author(s)	No. of time(s) co-authored
1	1
2	2

Sorted into communities: Co-authors are placed near one another if they frequently collaborate with each other and each other's co-authors in the graph.

Co-Author Network (GraphML File)

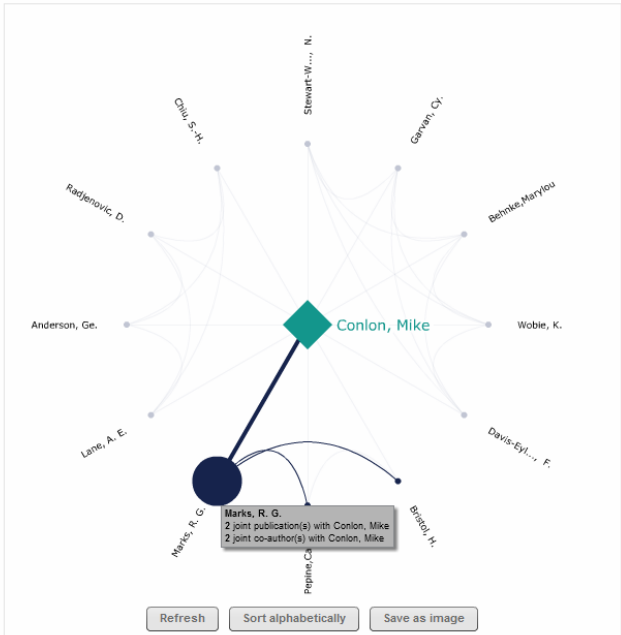
Profile

Marks, R. G.

[VIVO profile](#) | [Co-author network](#)

- 2 Joint Publication(s)
- 3 Joint Co-author(s)
- 2001 First Publication
- 2002 Last Publication

Note: This information is based solely on publications which have been loaded into the VIVO system. This may only be a small sample of the person's total work.



Interact

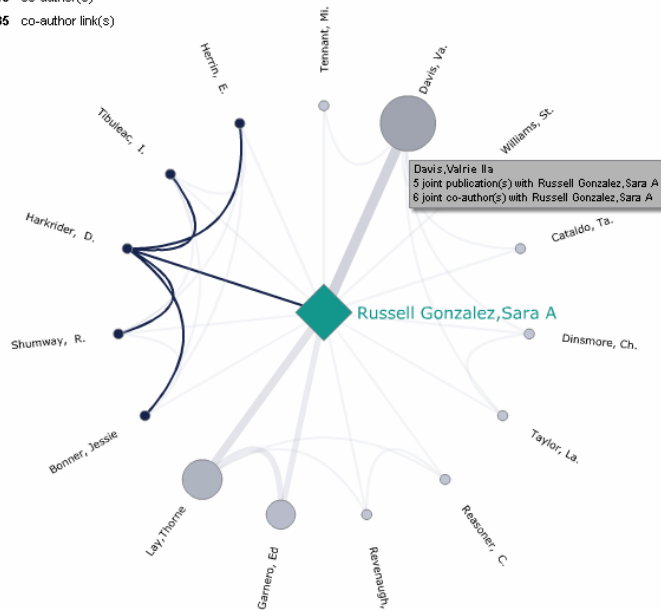
Hover over any name to see the number of joint publications and co-authors with Conlon, Mike.

Legend

No. of co-author(s)	No. of time(s) co-authored
<span style="color: grey;">●</span>	1
<span style="color: grey;">—</span>	1
<span style="color: blue; font-size: 2em;">●</span>	2
<span style="color: blue; font-weight: bold;">—</span>	2

Co-Author Network (GraphML File)

15 co-author(s)  
35 co-author link(s)



Harkrider, David G.

[VIVO profile](#) | [Co-author network](#)

- 1 Joint Publication(s)
- 5 Joint Co-author(s)
- 2003 First Publication
- 2003 Last Publication



5 publications from 1991 to 2011  
[\(.CSV File\)](#)



12 co-authors from 2001 to 2011  
[\(.CSV File\)](#)

Tables

Publications per year (.CSV File)

Year	Publications
1991	1
2001	2
2002	1
2004	1

Co-authors (.CSV File)

Author	Publications with Conlon, Mike
Marks, R. G.	2
Bristol, H.	1
Behnke, Marylou	1
Wobie, K.	1
Davis-Eylor, F.	1
Stewart-Woods, N.	1
Garvan, Cynthia S.	1
Pepine, Carl J.	1
Lane, A. E.	1
Anderson, Gene C.	1
Radjenovic, D.	1
Chiu, S.-H.	1

## Co-Investigator Network [\(GraphML File\)](#)

### Profile

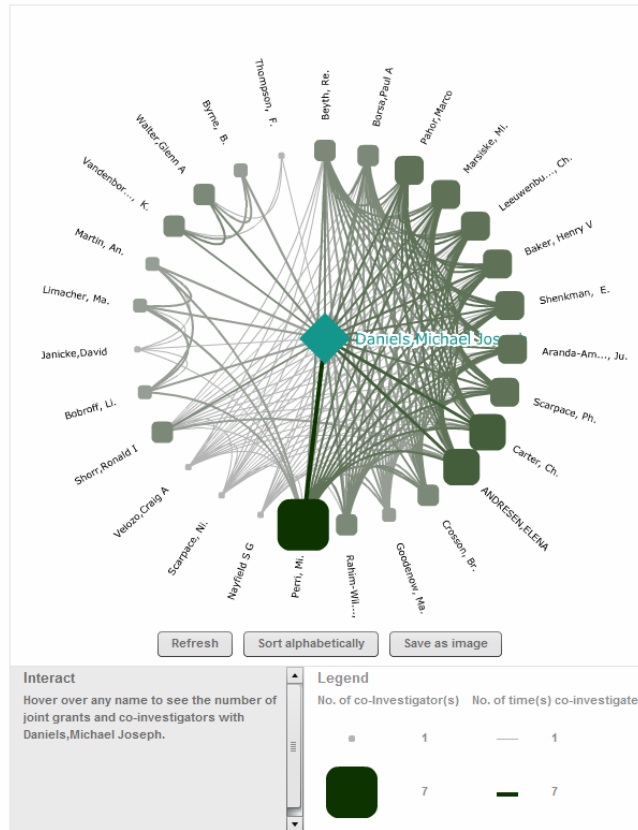
Daniels, Michael Joseph

PROFESSOR

[VIVO profile](#) | [Co-investigator network](#)

17 Grant(s)  
27 Co-investigator(s)  
2003 First Grant  
2010 Last Grant

Note: This information is based solely on grants which have been loaded into the VIVO system. This may only be a small sample of the person's total work.



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## Borner, Katy

Person

This information is based solely on publications which have been loaded into the VIVO system. This may only be a small sample of the person's total work.

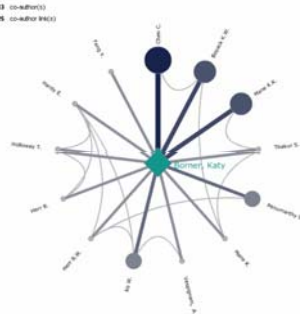
### General Statistics

36 publications(s) from 2001 to 2010 [\(.CSV File\)](#)

87 co-author(s) from 2001 to 2010 [\(.CSV File\)](#)

### Co-Author Network

13 co-author(s)  
25 co-author time(s)



Borner, Katy

Person

36 Publications(s)

13 Co-author(s)

2001 First Publication

2007 Last Publication

### Tables

Publications per [\(.CSV File\)](#)

Year

2001 2

2002 4

2003 2

2004 7

2005 7

2006 3

2007 10

Co-authored [\(.CSV File\)](#)

Publications with

Borner, Katy

Chen C. 5

Boyak K.W. 4

Mate K.K. 4

Ka W. 3

Panumathy S. 3

Vespongtham, Alessandro 2

Hart D. 2

Harada E. 2

Holloway T. 2

Hart B.W. 2

Thakur S. 2

Feng Y. 2

Mate K. 2

## Download Data

### General Statistics

- 36 publication(s) from 2001 to 2010 [\(.CSV File\)](#)
- 80 co-author(s) from 2001 to 2010 [\(.CSV File\)](#)

### Co-Author Network

[\(GraphML File\)](#)

Save as Image (.PNG file)

### Tables

- Publications per year [\(.CSV File\)](#)
- Co-authors [\(.CSV File\)](#)

[http://vivo-](http://vivo-vis.slis.indiana.edu/vivo1/visualization?uri=http%3A%2F%2Fvivoeb.org%2Ffontology%2Fcore%2Fperson%2F&vis=person_level&render_mode=standalone)

[vis.slis.indiana.edu/vivo1/visualization?uri=http%3A%2F%2Fvivoeb.org%2Ffontology%2Fcore%2Fperson%2F&vis=person\\_level&render\\_mode=standalone](http://vivo-vis.slis.indiana.edu/vivo1/visualization?uri=http%3A%2F%2Fvivoeb.org%2Ffontology%2Fcore%2Fperson%2F&vis=person_level&render_mode=standalone)

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36 publication(s) from 2001 to 2010 ([.CSV File](#))

Year	Publications
2001	2
2002	4
2003	2
2004	7
2005	7
2006	3
2007	10
2010	1

80 co-author(s) from 2001 to 2010 ([.CSV File](#))

Year	Count	Co-Author(s)
2001	1	Chen C.
2002	3	Chen C.; McMahon T.; Feng Y.
2003	2	Chen C.; Boyack K.W.
2004	17	Sengupta A.; Penumathy S.; Thakur S.; Sooriamurthi R.; Maru J.T.; Shiffrin R.M.; Mane K.; Moor K.A.;

Co-author network ([GraphML File](#))

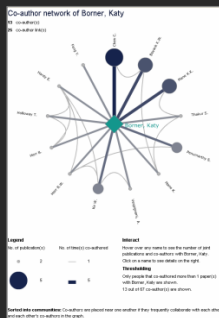
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1 <?xml version="1.0" encoding="UTF-8"?>
2 <graphml xmlns="http://graphml.graphdrawing.org/xmlns"
3   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
4   xsi:schemaLocation="http://graphml.graphdrawing.org/xmlns
5     http://graphml.graphdrawing.org/xmlns/1.0/graphml.xsd">
6 <key id="label" for="node" attr.name="label" attr.type="string" />
7 <key id="number_of_authored_works" for="node" attr.name="number_of_authored_works" attr.type="int" />
8 <key id="num_unknown_publication" for="node" attr.name="num_unknown_publication" attr.type="int" />
9 <key id="num_latest_publication" for="node" attr.name="num_latest_publication" attr.type="int" />
10 <key id="latest_publication" for="node" attr.name="latest_publication" attr.type="int" />
11 <key id="profile_url" for="node" attr.name="profile_url" attr.type="string" />
```

Save as Image (.PNG file)

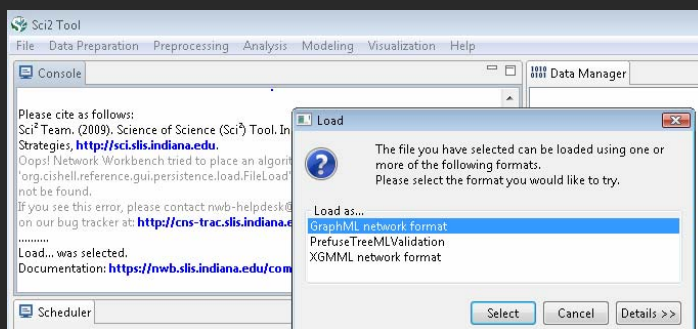
Publications per year ([.CSV File](#)), see top file.

Co-authors ([.CSV File](#))

Co-Author	Count
Andrienko G.	1
Andrienko N.	1
Ben-Miled Z.	1
Blackwell A.	1
Boyack K.W.	4
Bozicevic M.	1
Brodbeck D.	1
Burkhard R.A.	1
Chen C.	5

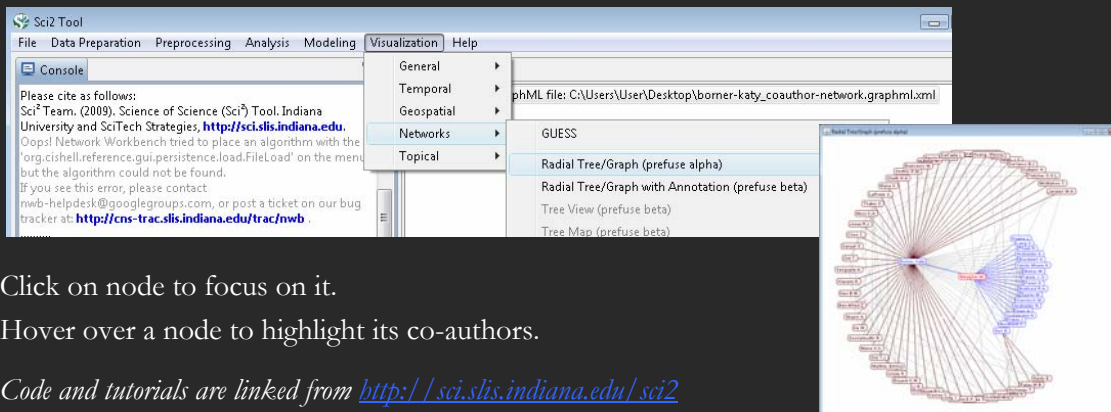


Run Sci2 Tool and Load Co-Author Network ([GraphML File](#))



Network Analysis Toolkit  
Nodes: 81  
Edges: 390

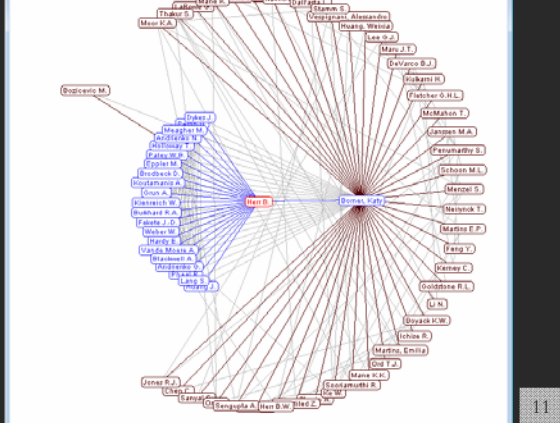
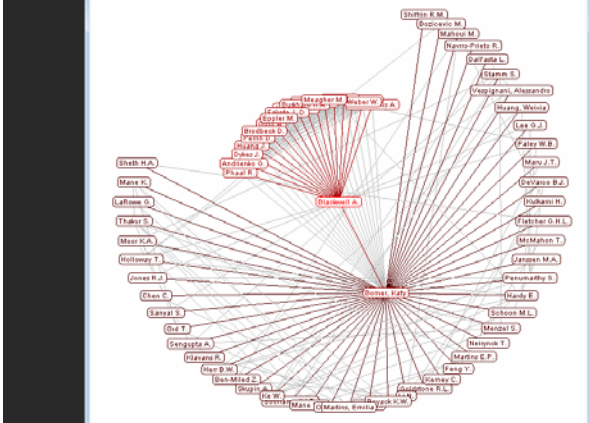
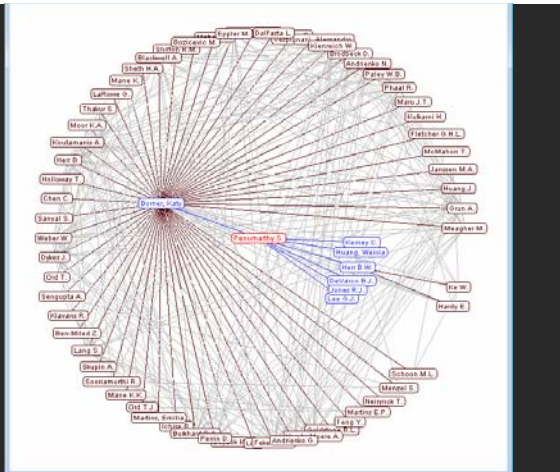
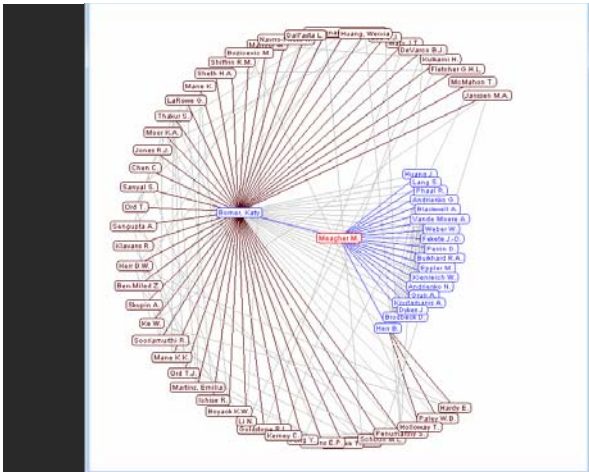
Visualize the file using Radial Graph layout.



Click on node to focus on it.

Hover over a node to highlight its co-authors.

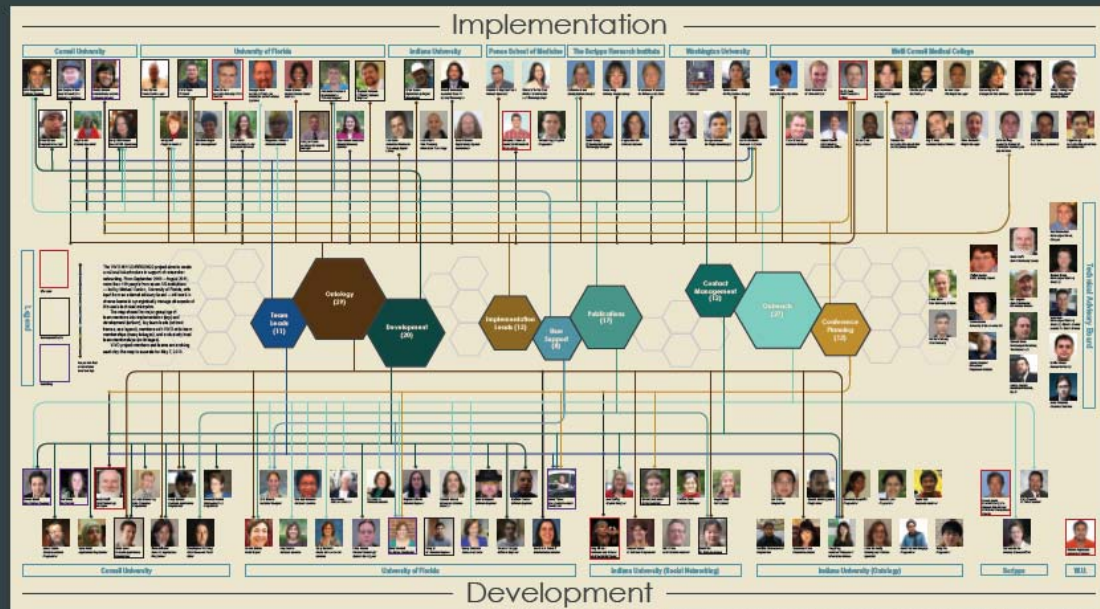
Code and tutorials are linked from <http://sci.slis.indiana.edu/sci2>



# Team Level (Meso)

# VIVO Enabling National Networking of Scientists

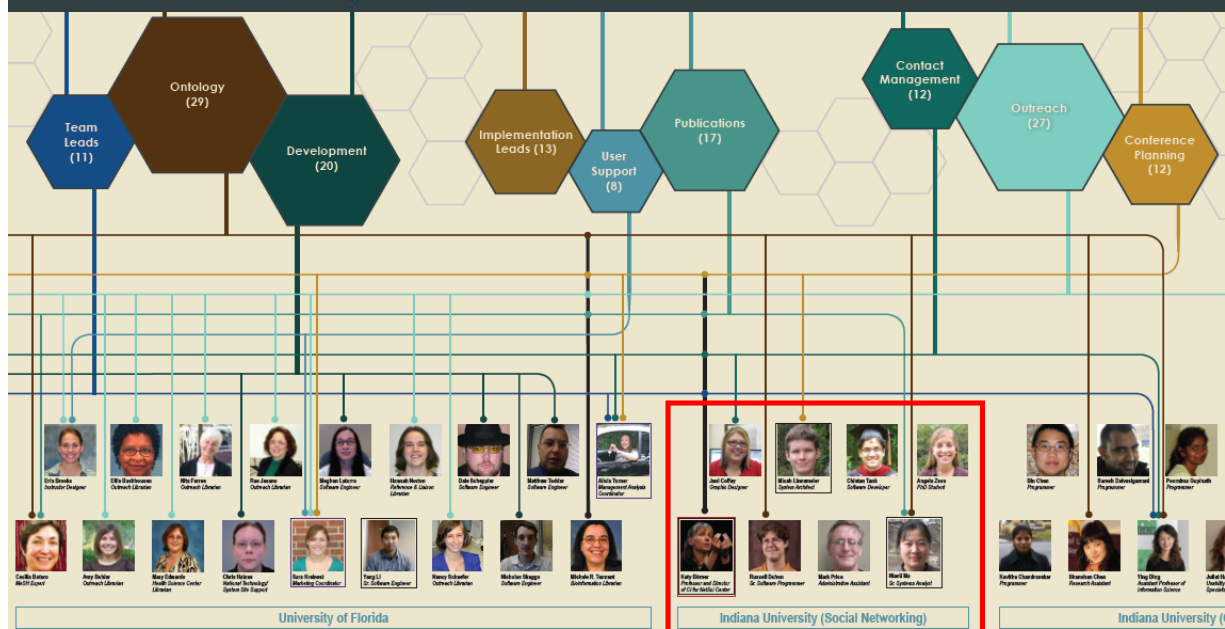
## Project Members and Teams



Please send comments and questions to [Janis.Culley@cornell.edu](mailto:Janis.Culley@cornell.edu) (design) and [John.L.Davis@indiana.edu](mailto:John.L.Davis@indiana.edu) (data acquisition) and [Julie.Brown@cornell.edu](mailto:Julie.Brown@cornell.edu) for more information, [www.vivo.isi.edu](http://www.vivo.isi.edu)  
2010.05.07

# VIVO Enabling National Networking of Scientists

## Project Members and Teams



Using Listserv membership data to map a team.

## University of Florida

How do you want to compare?

by Grants

Who do you want to compare?

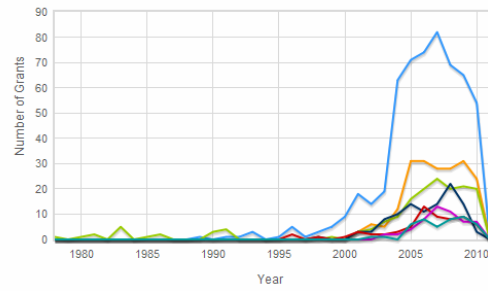
Search:  X

Records 1 - 10 of 30 < First < Prev Next > Last >

Entity Label	Grant Count	Entity Type
<input checked="" type="checkbox"/> Continuing Education	562	UF Department, Agent, Non-Academic Department, Department
<input checked="" type="checkbox"/> Florida Museum of Natural History	203	Museum, Agent
<input checked="" type="checkbox"/> College of Agricultural and Life Sciences	166	Agent, UF College, College
<input checked="" type="checkbox"/> College of Engineering	103	Agent, UF College, College
<input checked="" type="checkbox"/> Evelyn F. and William L. McKnight Brain Institute of the University of Florida	64	UF Center, Agent, Center
<input checked="" type="checkbox"/> International Center	54	UF Department, Agent, Non-Academic Department, Department
<input checked="" type="checkbox"/> Florida Sea Grant	44	UF Center, Agent, Center
<input type="checkbox"/> Whitney Laboratory for Marine Bioscience	42	UF Research Laboratory, Agent, Laboratory, Research Laboratory
<input type="checkbox"/> Water Institute	38	UF Center, Agent, Center
<input type="checkbox"/> College of Dentistry	35	Agent, UF College, College

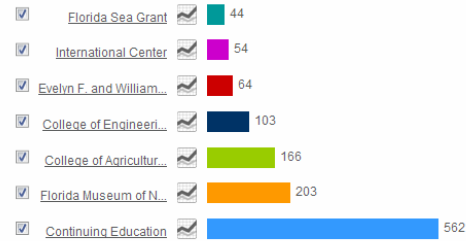
Save as CSV Clear

## Comparing Grants of Organizations in University of Florida

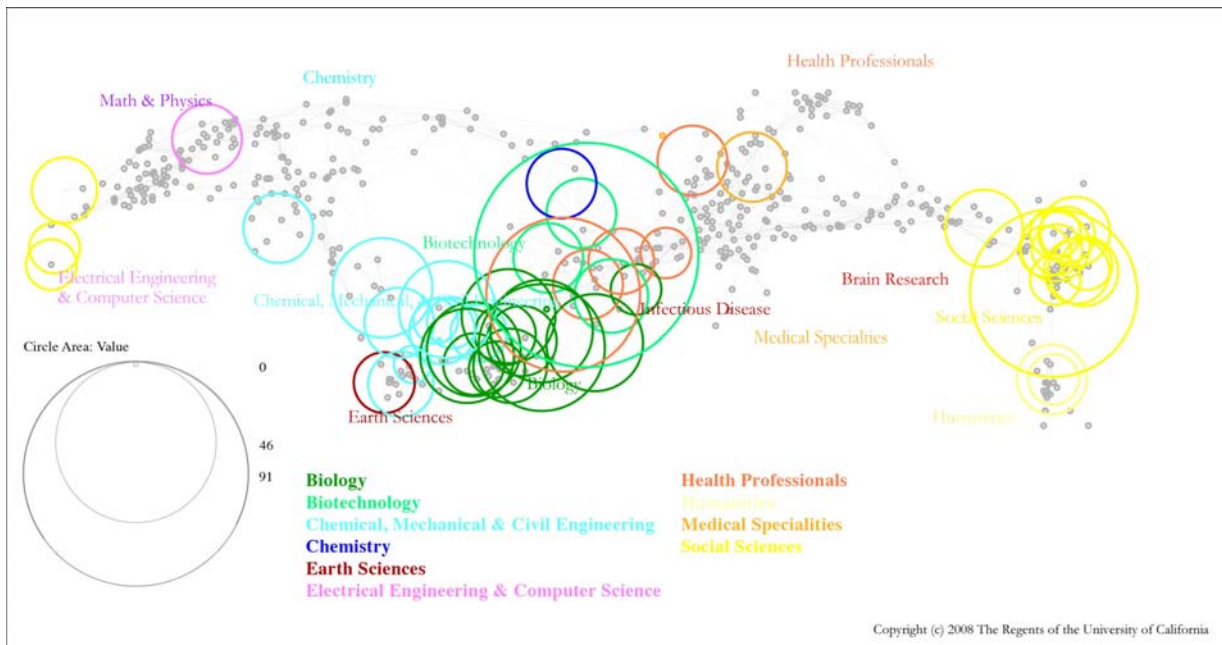


## Total Number of Grants

You have selected 7 of a maximum 10 organizations to compare. Clear



15



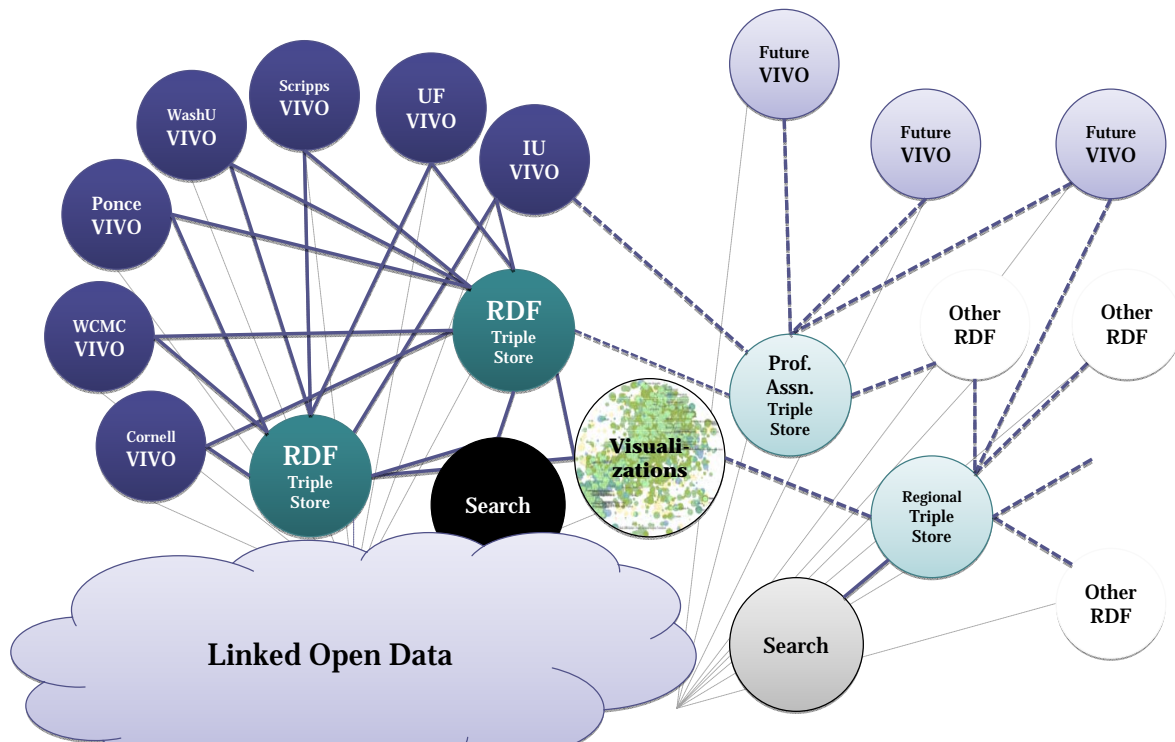
Science Map – shows where a person, department, or university publishes most in the world of science. (generated using dummy data)

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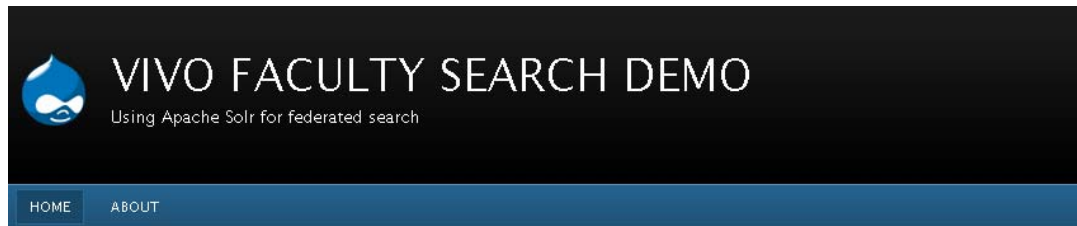


# National Level (Macro)

## VIVO National Level Visualizations



# VIVO National Level Search



## HOME

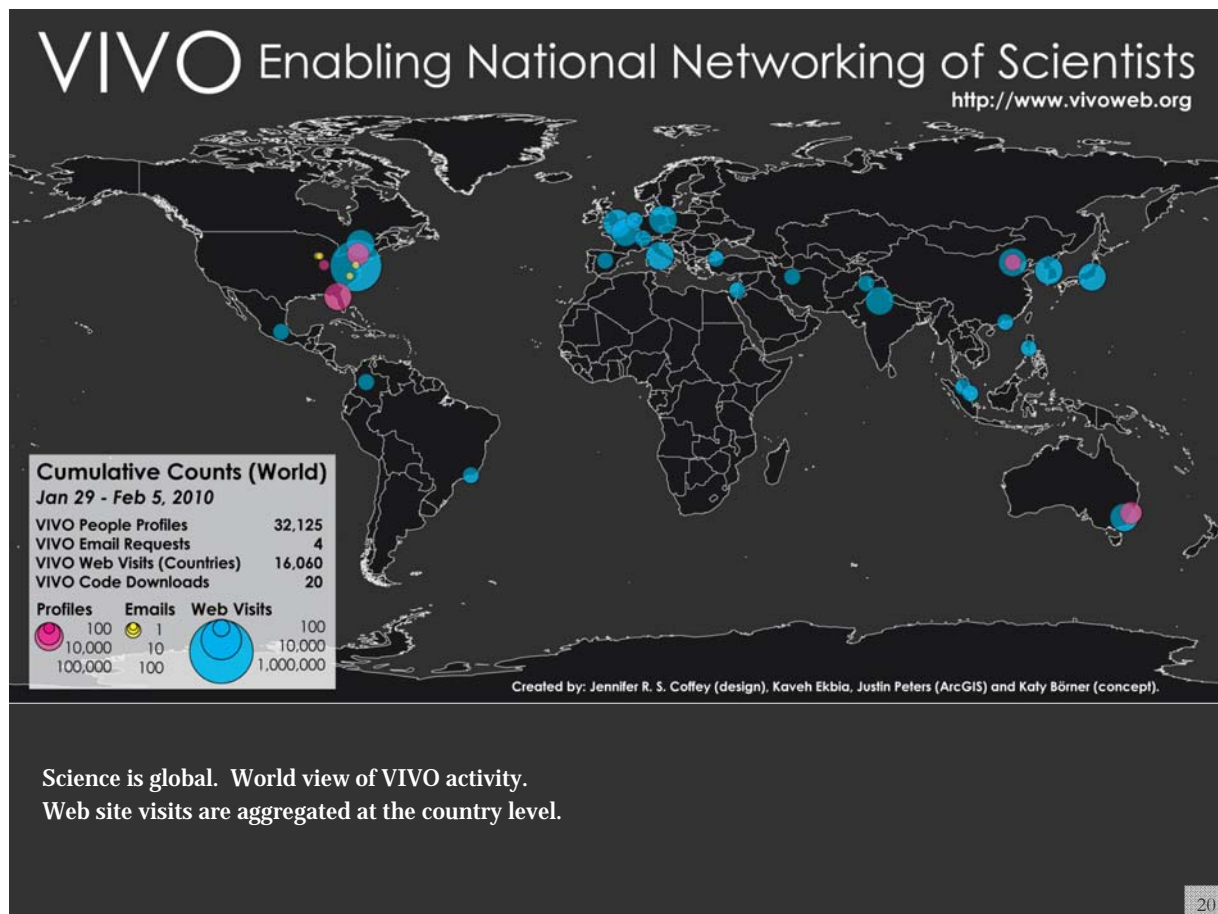
SEARCH FACULTY ACROSS INSTITUTIONS

Examples: *drosophila*, *conference japan*, *Washington*

This site demonstrates the distributed search capabilities of Apache Solr, using Drupal 6 as a front end. Distributed search and search part of Solr itself, so this is also possible with other platforms.

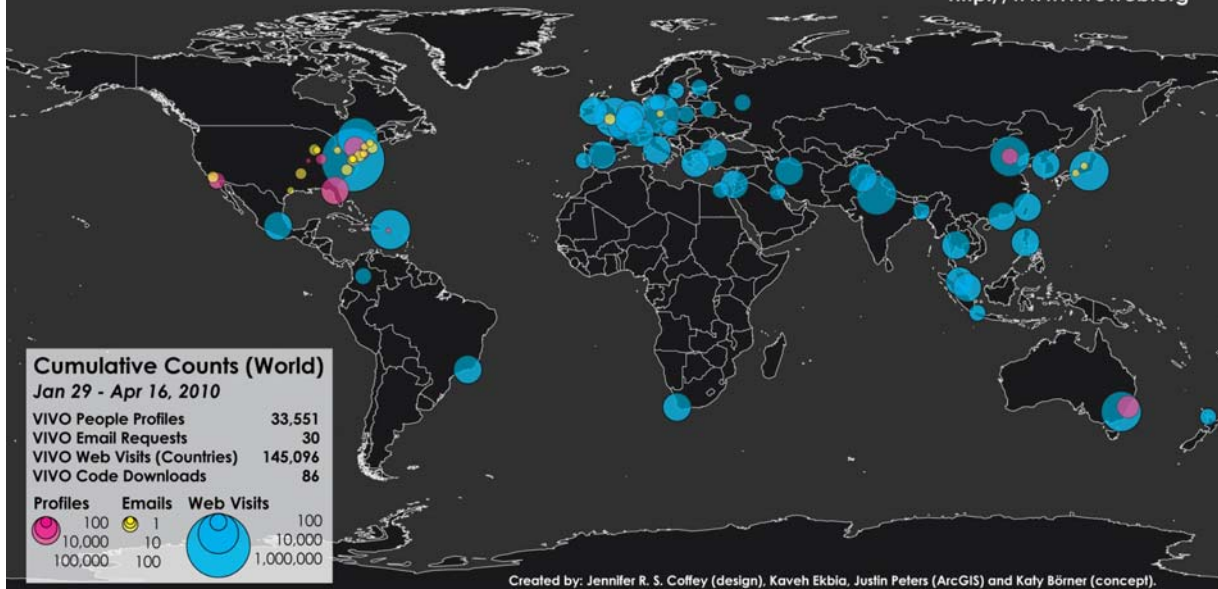
<http://mileswothington.com/vivosearch>

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# VIVO Enabling National Networking of Scientists

<http://www.vivoweb.org>



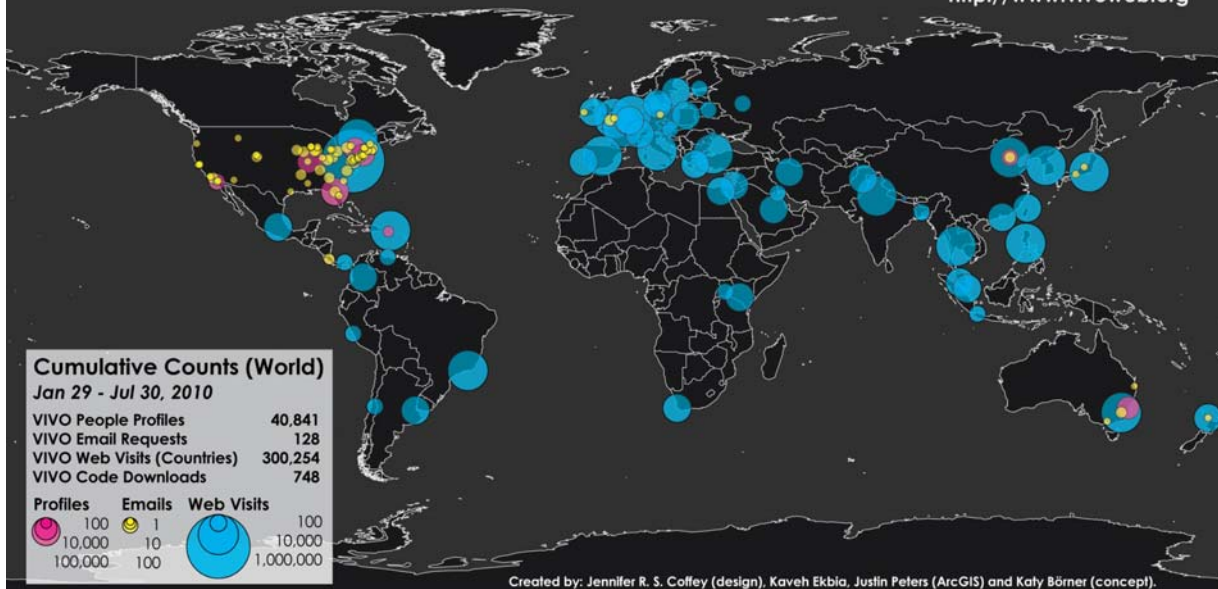
Shown are the

- Number of people profiles in the 7 different VIVO installation sites plus CAS and U Melbourne.
  - Email contacts by data and service providers as well as institutions interested to adopt VIVO.
  - The number of visitors on <http://vivoweb.org>
- Circles are area size coded using a logarithmic scale.

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# VIVO Enabling National Networking of Scientists

<http://www.vivoweb.org>



VIVO 1.0 source code was publicly released on April 14, 2010

87 downloads by June 11, 2010.

The more institutions adopt VIVO, the more high quality data will be available to understand, navigate, manage, utilize, and communicate progress in science and technology.

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# NRN National Level Search

**DIRECT**   
Distributed Interoperable Research Experts Collaboration Tool

A Federated Network of Biomedical Research Expertise  
DIRECT-ly Supported by Researchers' Institutions

[Home](#) | [About DIRECT](#) | [Phase 1 - Aggregate Search](#) | [Phase 2 - Integrated Search](#) | [Participants](#) | [Join the Network](#)

## A Network for All

The DIRECT network, open to all biomedical institutions, is a pilot project facilitated by the Research Networking Working Group of the NIH-supported Clinical & Translational Science Award (CTSA) Consortium.

## Our Goal

To improve biomedical research and leverage our strengths as a community by creating a network that enables easy access to expertise and related resources across institutions regardless of local platforms and tools, and in collaboration with participating institutions to ensure access to approved and verified data.

## What makes DIRECT different?

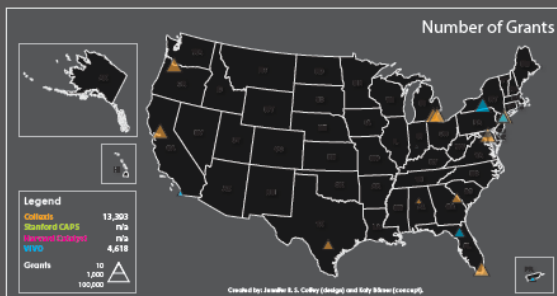
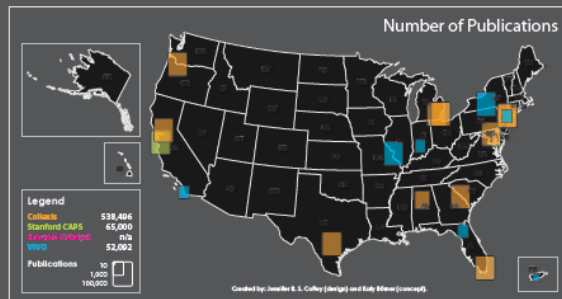
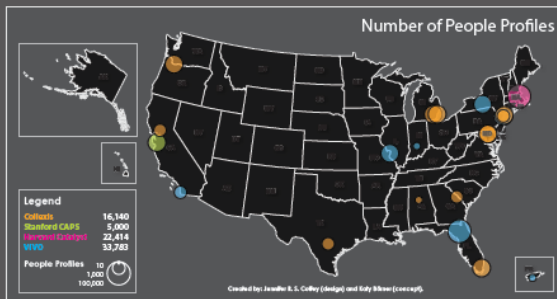
- Rather than searching public databases or asking individual researchers to "sign-up", DIRECT works directly with institutions to connect to their existing research networking tools.
- DIRECT works across different software products and respects local privacy policies, enabling many institutions to participate.
- The focus of DIRECT is to bring more institutions and investigators into the fold, allowing for an assessment of the value provided and challenges of searching a national network of experts.



**CTSA Clinical & Translational<sup>®</sup> Science Awards**  
The Clinical and Translational Science Awards (CTSA) is a registered trademark of DHHS.

DIRECT is a Clinical and Translational Science Awards (CTSA) initiative supported by the [National Center for Research Resources](#), part of the [National Institutes of Health](#).

## National Research Networking (NRN) Activity Visualization

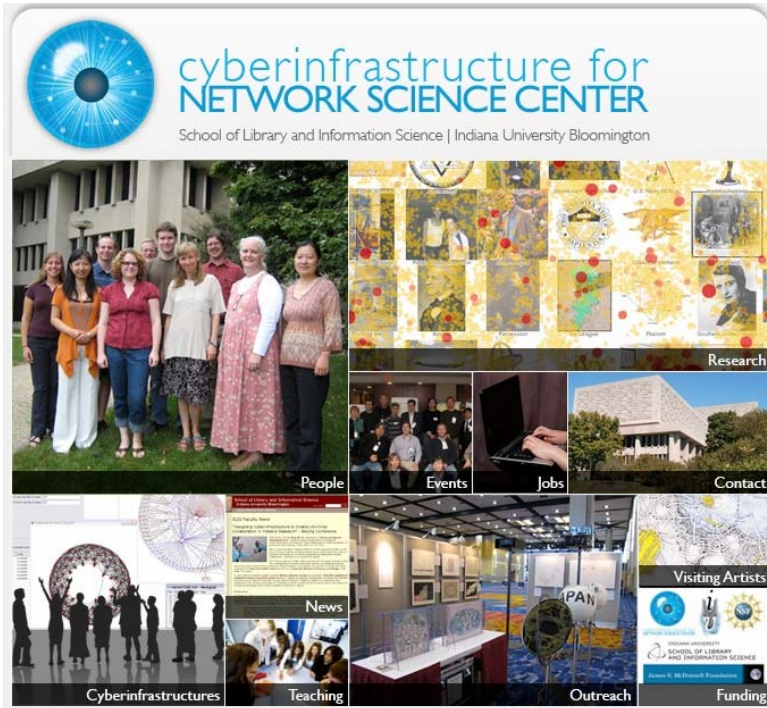


## Visualization Explanation

Apitrat. Ipsunto ea inishola volupta quossunt omnia qui omnimag natem. Nem nensendita aut ut aped quia nones et laut expiatibus, que latus parovi derum neculent ut protempore nans- quae neato tem rempora core pilibus is eatectur? Rorparunt facerum facerionsea qui sum sunt aut mi malos restitit ea dunt etur aut fugiametur as algenduntum facuum aut que sapidunt inore lanimus dia atola qui cus ma quis molupta sum rerum volupii strunt facuum inimus mag- nferestrunt algenti dolorum quam relia soluptasped eost utem num quis elurit, et doeaqui re- henihitit disti et qui quia quibus esa quamus, cus amusanim uliaci totatur, coretram, as verim hil malorro iunt faoepratus ut expiciam, sinetem ad et qui quunt. Aaque eost et minvend ipsant.

## Grant Info

Apitrat. Ipsunto ea inishola volupta quossunt omnia qui omnimag natem. Nem nensendita aut us dolentis volesecte porpora fionseque onestotatis sum saerum arum quamet voluptoepe comniestit bere renisciatio ipsum nos delitissim iustibus sequia malo esto volorem aut resed quoepus magnis duntion senteni stiorum eataquam aut liquis et fugit aut enis endis aspeliu- tur adit volioribus. Opatrone nam fugit vhae quatur audam viduntus dolit modis dit eaqum, omni tet esclenit ipsam, sinitio nensis ilis prepia veiquisime pro sequia quunt.



All papers, maps, cyberinfrastructures, talks, press are linked from <http://cns.slis.indiana.edu>