

Science of Science Research and Tools Tutorial #11 of 12

Dr. Katy Börner

Cyberinfrastructure for Network Science Center, Director
Information Visualization Laboratory, Director
School of Library and Information Science
Indiana University, Bloomington, IN
<http://info.slis.indiana.edu/~katy>

With special thanks to Kevin W. Boyack, Micah Linnemeier,
Russell J. Duhon, Patrick Phillips, Joseph Biberstine, Chintan Tank
Nianli Ma, Hanning Guo, Mark A. Price, Angela M. Zoss, and
Scott Weingart

Invited by Robin M. Wagner, Ph.D., M.S.
Chief Reporting Branch, Division of Information Services
Office of Research Information Systems, Office of Extramural Research
Office of the Director, National Institutes of Health

*Suite 4090, 6705 Rockledge Drive, Bethesda, MD 20892
9:30a-11:30a, July 28, 2010*



12 Tutorials in 12 Days at NIH—Overview

1. Science of Science Research **1st Week**
2. Information Visualization
3. CIShell Powered Tools: Network Workbench and Science of Science Tool

4. Temporal Analysis—Burst Detection **2nd Week**
5. Geospatial Analysis and Mapping
6. Topical Analysis & Mapping

7. Tree Analysis and Visualization **3rd Week**
8. Network Analysis
9. Large Network Analysis

10. Using the Scholarly Database at IU **4th Week**
11. VIVO National Researcher Networking
12. Future Developments



12 Tutorials in 12 Days at NIH—Overview

[#11] VIVO National Researcher Networking

- Motivation
- Users, Their Needs, and Usage Scenarios
- Development
- Implementation
- Usage
- Outlook
- Exercise: Identify Promising VIVO Collaborations

Recommended Reading

VIVO home page, <http://vivoweb.org>

VIVO Conference in NYC in August 2010, <http://conferences.dce.ufl.edu/vivo>

3

[#11] VIVO National Researcher Networking

- **Motivation**
- **Users, Their Needs, and Usage Scenarios**
- **Development**
- **Implementation**
- **Usage**
- **Outlook**
- **Exercise: Identify Promising VIVO Collaborations**

4

How many of you use

The screenshot shows the Epernicus website in a Mozilla Firefox browser. The address bar displays <http://www.epernicus.com/>. The page features a navigation menu with options like 'Search', 'What's Hot', 'What's New', 'Featured', and 'For You'. The main content area is titled 'Epernicus: Where Science Meets' and includes a 'Join Epernicus' form with fields for 'First name', 'Last name', and 'Email'. A 'Continue' button is located below the form. To the right, there is a section titled 'The Shortest Path to People and Expertise in Your Scientific Network' with a sub-heading 'CREATE YOUR SCIENTIFIC PROFILE'. This section displays a profile for 'Therese M Roth, Ph.D.', a 'Post Doctoral Fellow' at the 'Life Sciences Institute' and 'Center for Stem Cell Biology' at the 'University of Michigan (Ann Arbor, MI)'. A public profile link is provided: <http://www.epernicus.com/tmr>. Below this, there is a section for 'CONNECT WITH CURRENT AND FORMER COLLEAGUES'. The browser's search bar at the bottom shows the search term 'austra'.

How many of you use

The screenshot shows the Harvard Catalyst Profiles website in a Mozilla Firefox browser. The address bar displays <http://connects.catalyst.harvard.edu/PROFILES/ProfileDetails.aspx?From=SE&Person=>. The page features a navigation menu with options like 'About Harvard Catalyst', 'National CTSA Consortium', 'Contact Us', and 'News'. The main content area is titled 'Harvard Catalyst' and 'The Harvard Clinical and Translational Science Center'. It includes a 'FIND PEOPLE' search bar and a 'Profiles' section. The profile displayed is for 'Alvaro Pascual-Leone, PH.D., M.D.', a 'Professor of Neurology' at 'Beth Israel Deaconess Medical Center'. The profile includes a photo, a 'Back' link, and a list of 'Keywords' such as 'Transcranial f Stimulation', 'Motor Cortex', 'Electromagne', 'Evoked Poten', 'Motor', and 'Electric Stimu Therapy'. The browser's search bar at the bottom shows the search term 'austra'.

How many of you use

The screenshot shows a Mozilla Firefox browser window with the address bar displaying `http://myprofile.cos.com/schleyet18`. The page title is "Profile - Mozilla Firefox". The browser's search bar contains "vuze". The main content area features a profile for "Dr. Titus K. Schleyer" powered by "COS Expertise". The profile includes the following information:

- University of Pittsburgh
School of Dental Medicine
Center for Dental Informatics
Associate Professor Appointed: 2002
- University of Pittsburgh
School of Dental Medicine
Center for Dental Informatics
Director Appointed: 2002
- Pittsburgh Medical Informatics Training Program
School of Medicine
Department for Biomedical Informatics
Co-Director and Professor Appointed: 1996

A portrait photo of Dr. Schleyer is shown to the right of the text. Below the profile information, there are two sections: "Mailing Address" and "Contact Information".

Mailing Address: University of Pittsburgh, School of Dental Medicine.

Contact Information: Phone: (412) 648-8886, titus@pitt.edu.

The browser's search bar at the bottom contains the text "Find: austra" and navigation buttons for "Next", "Previous", "Highlight all", and "Match case". The status bar at the bottom indicates "Done".

How many of you use

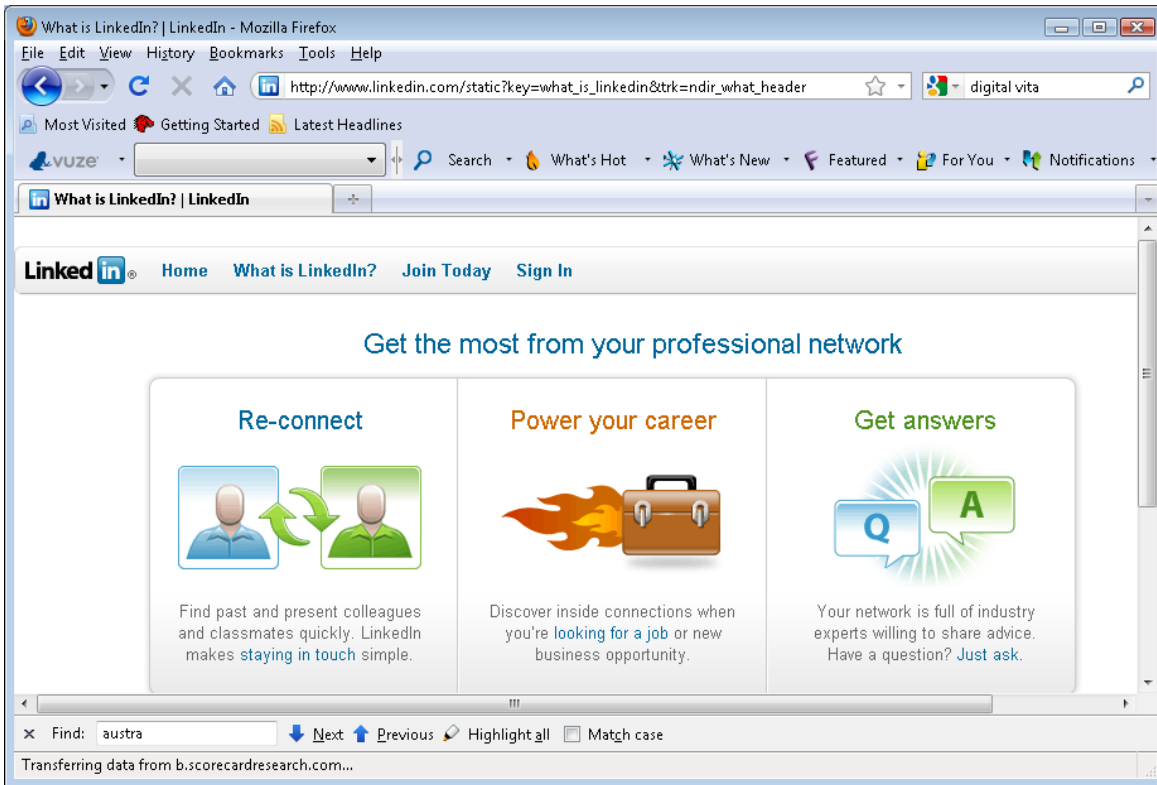
The screenshot shows a Mozilla Firefox browser window with the address bar displaying `http://harvard.academia.edu/StevenPinker`. The page title is "Steven Pinker | Harvard University - Academia.edu - Mozilla Firefox". The browser's search bar contains "vuze". The main content area features a profile for "Steven Pinker" on "Academia.edu". The profile includes the following information:

- Check out my wife Rebecca Goldstein's new novel (and academic satire) 36 Arguments for the Existence of God: A Work of Fiction. www.36arguments.com
5 months ago
- Harvard University**
- Faculty Member, Psychology**
- Harvard College Professor and Johnstone Family Professor**
- About**
I am a cognitive scientist interested in all aspects of the human mind. My past research has concentrated on visual cognition (imagery, attention, shape recognition), language acquisition (syntax, morphology, and lexical semantics), and psycholinguistics.

A portrait photo of Steven Pinker is shown to the left of the text. The page also features a navigation menu at the top with links for Home, News, Departments, Research Interests, People, Papers, Status Updates, Find Friends, Login, and Signup. A search bar for "Search Academia.edu" is visible on the right. A "Follow Steven Pinker" button is also present. A small profile picture of another user, Carolyn, is visible in the bottom right corner.

The browser's search bar at the bottom contains the text "Find: austra" and navigation buttons for "Next", "Previous", "Highlight all", and "Match case". The status bar at the bottom indicates "Done".

How many of you use



How many of you use FaceBook? What other social networking sites do you use?



[#11] VIVO National Researcher Networking

- Motivation
- Users, Their Needs, and Usage Scenarios
- Development
- Implementation
- Usage
- Outlook
- Exercise: Identify Promising VIVO Collaborations

13

VIVO Users and Needs



- Faculty/Researchers
 - Customize profile created via feeds; find potential collaborators, “people like me”; discovery via high search rankings; info on activity of colleagues...
- Students
 - Create profiles; easily find mentors + collaborators; locate facilities, events, funding opportunities...
- Administrators
 - Quickly find cross-disciplinary expertise (research area; geography); centralize public data from diverse sources; easily repurpose information for consumers; improve faculty collaboration within or across departments and institutions...
- Funding, donor, legislative agencies
 - Discover projects, grants, expertise (e.g. for review panels; targets for funding)...
- General public
 - Find expertise, learn about research in a region/institution...

VIVO Web Pages

Cornell University

Graduate Programs in the Life Sciences

Home Graduate Fields Research Areas Faculty Facilities Search

Graduate programs at Cornell are organized by Fields. The first step in applying is identifying a Field that best matches your academic goals.

With over 30 Fields to choose from in the Life Sciences, let's narrow it down by selecting a broad interest.

- applied biology
- biomedical sciences
- ecology, evolution, and integrative biology
- genetics, genomics, and bioinformatics
- molecular and cellular biology
- physical, chemical, and computational biology

...or see the [full list of Fields](#) instead

Already determined which Field is right for you? [Apply Now](#)

© 2008 Life Sciences Cornell University Ithaca, NY 14853 [Site Feedback](#)

<http://gradeducation.lifesciences.cornell.edu>

VIVO Web Pages

Cornell University
College of Agriculture and Life Sciences

Search CALS Search Cornell

CALS Experts Guide

Connecting Journalists with the CALS Community

► CALS Home
► CALS Communications
 Newsroom
 Publications
► Experts Guide
 Home
 Search
 Experts by Name
 Experts by Topic

This site is an online directory intended to help members of the news media identify experts within Cornell's College of Agriculture and Life Sciences.

CALS faculty address an extraordinary range of topics, including many of today's most significant issues. To simplify the process of finding the right expert, we've highlighted some of these timely issues and featured faculty active in those areas.

Featured Experts

CLIMATE CHANGE

 **Colucci, Stephen John**
Stephen J. Colucci is a Professor in the Department of Earth and Atmospheric Sciences. His research and teaching are in the general area of atmospheric science, with the goal of learning more and informing students about weather systems and processes.

FOOD SAFETY

Search for Experts
 [GO](#)

Find by Name
Adler, Kraig [GO](#)

Find by Topic

- Beekeeping
- Biofuels
- Climate Change
- Food Safety
- Sustainability

<http://cals-experts.mannlib.cornell.edu/>





VIVO Web Pages

Welcome to CALS Research

A portal to all CALS Research activities. Select the individual academic priority areas in the banner above for a more filtered view.

CALS Research News

Recent news on research and activities in CALS.

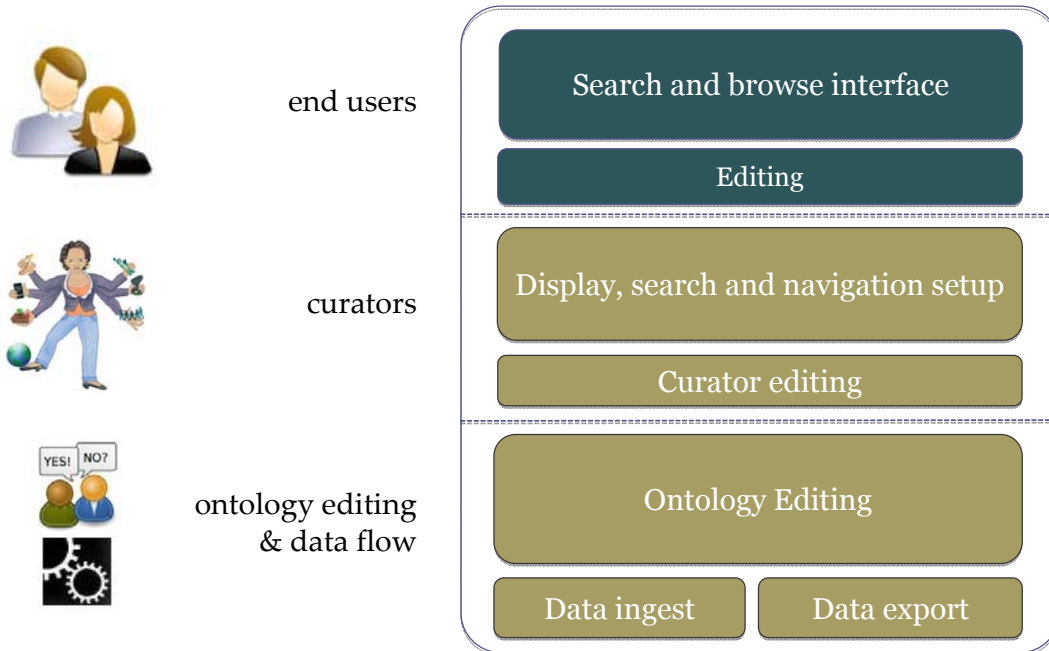
- 
Chinese delegation visits campus to reclaim historic fungi collection after 70-year Cornell stewardship | Cornell Chronicle feature | [04/13/2009 Chronicle feature](#)
 After years of careful stewardship by Cornell scientists, a collection of more than 2,900 species of native Chinese fungi, spotted out of the country for safety before World War II, is finally set to make its way home.
- 
Durst honored by inclusion in institute's portrait gallery | Cornell Chronicle feature | [04/13/2009 Chronicle feature](#)
 Richard Durst has been selected for inclusion in the National Institute of Standards and Technology Portrait Gallery, which honors distinguished National Bureau of Standards (NBS)/NIST alumni for "outstanding career contributions to the work of NBS/NIST."
- 
In face of competition, male fruit flies change to gain reproductive edge | Cornell Chronicle feature | [04/13/2009 Chronicle feature](#)
 A study by researchers from Cornell, University of East Anglia and University College London found that when male fruit flies sense competition during mating, they pack more proteins into their seminal fluid, boosting their reproductive success.
- 
CU study: Poverty can physically impair brain, reducing children's ability to learn | Cornell Chronicle feature | [04/09/2009 Chronicle feature](#)
 Chronic stress from growing up in poverty can physically impact children's brains, impairing their working memory and diminishing their ability to develop language, reading and problem-solving skills, reports a new Cornell study.

<http://research.cals.cornell.edu>

[#11] VIVO National Researcher Networking

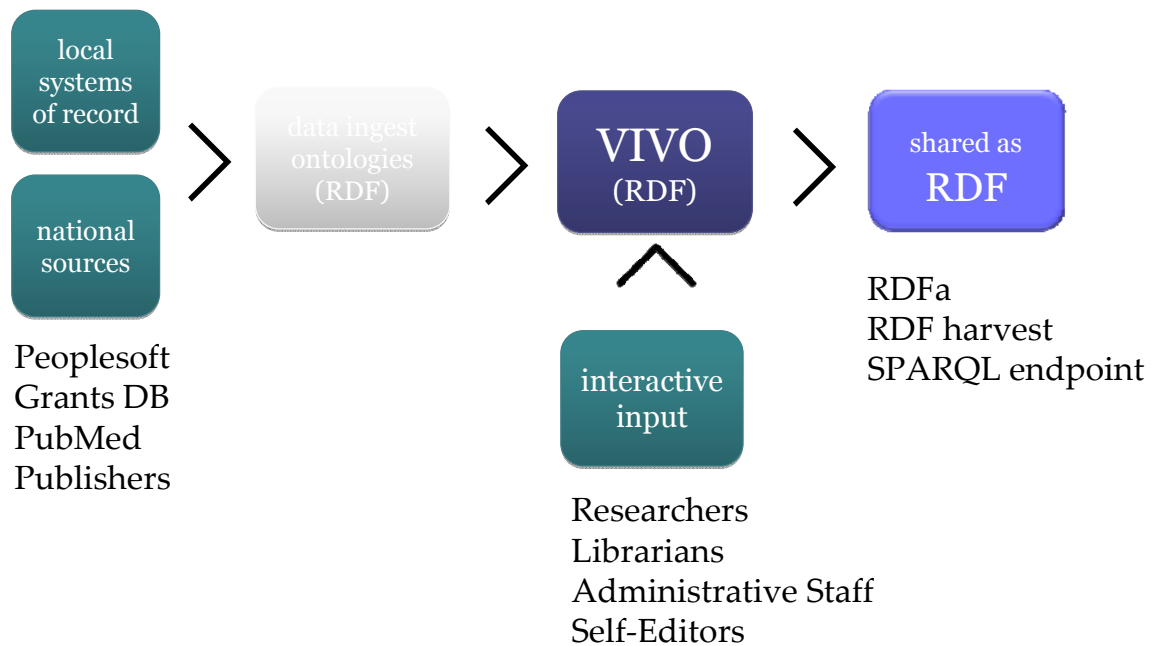
- Motivation
- Users, Their Needs, and Usage Scenarios
- Development
- Implementation
- Usage
- Outlook
- Exercise: Identify Promising VIVO Collaborations

VIVO's Three Functional Layers



19

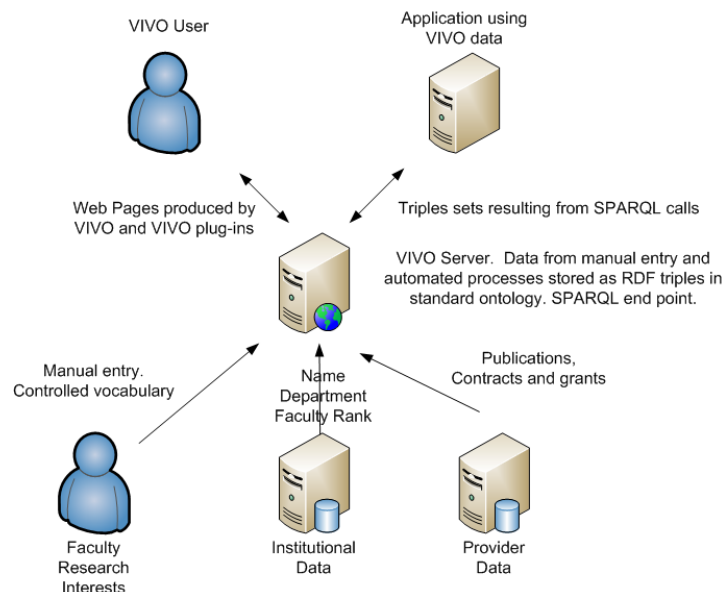
Local Data Flow



20

Institutional Architecture

- Three sources of VIVO information
 - User data
 - Institutional data
 - Provider data
- Two formats for output
 - Web Pages for users
 - Resource Description Framework for applications

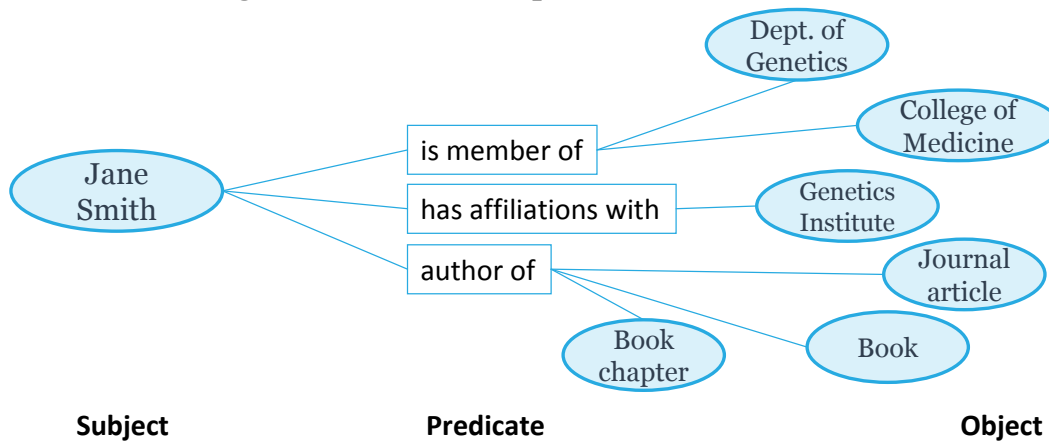


VIVO Data Providers & Users

- Eagle-i (“enabling resource discovery” U24 award)
- Federal agencies – NIH (NIH RePORTER), NSF, USDA, ...
- Search Providers – Google, Bing, Yahoo, ...
- Professional Societies – AAAS, ...
- Publishers/vendors – PubMed, Elsevier, Collexis, ISI...
- Semantic Web community – DERI, ...
- Consortia of schools – SURA, CTSA...
- Producers, consumers of semantic web-compliant data

Storing Data in VIVO

- Information is stored using the **Resource Description Framework (RDF)**.
- Data is structured in the form of “triples” as subject-predicate-object.
- Concepts and their relationships use a **shared ontology** to facilitate the harvesting of data from multiple sources.



23

Advantages of an Ontology Approach

Provides the key to meaning

- Defines a set of *classes* and *properties* in a unique namespace
- Embedded as RDF so data becomes self-describing
- Definitions available via the namespace URI

Helps align RDF from multiple sources

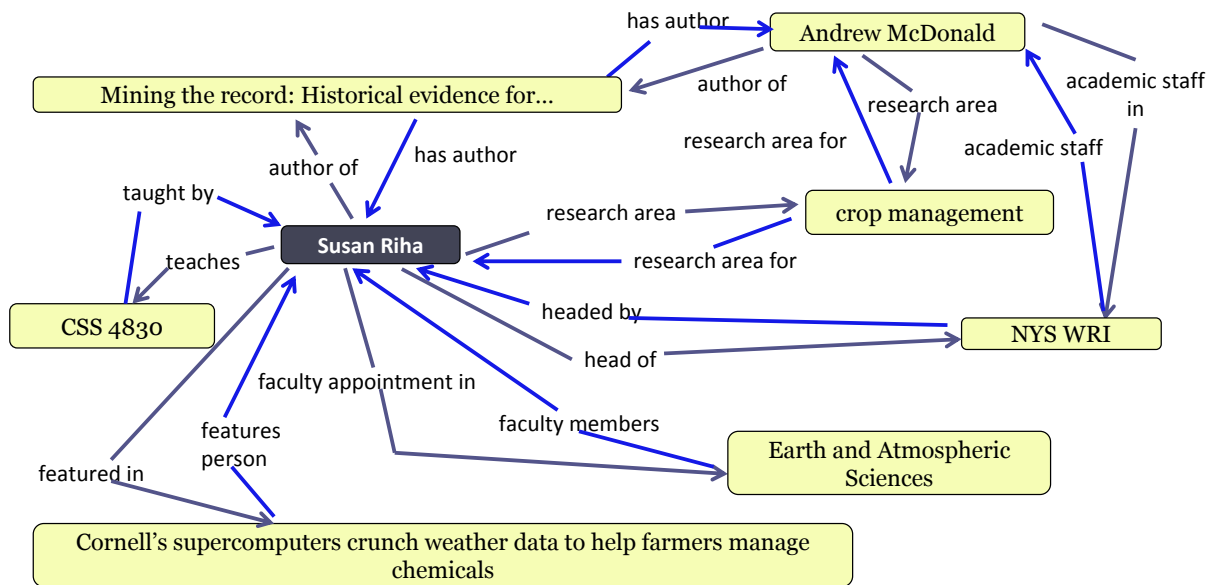
- VIVO core ontology maps to common shared ontologies organized by domain
- Local extensions roll up into VIVO core

24

Data Representation Using RDF Triples

Detailed relationships for a researcher at Cornell U.

Open source code (BSD) and ontology available at <http://vivoweb.org>.



Query and explore

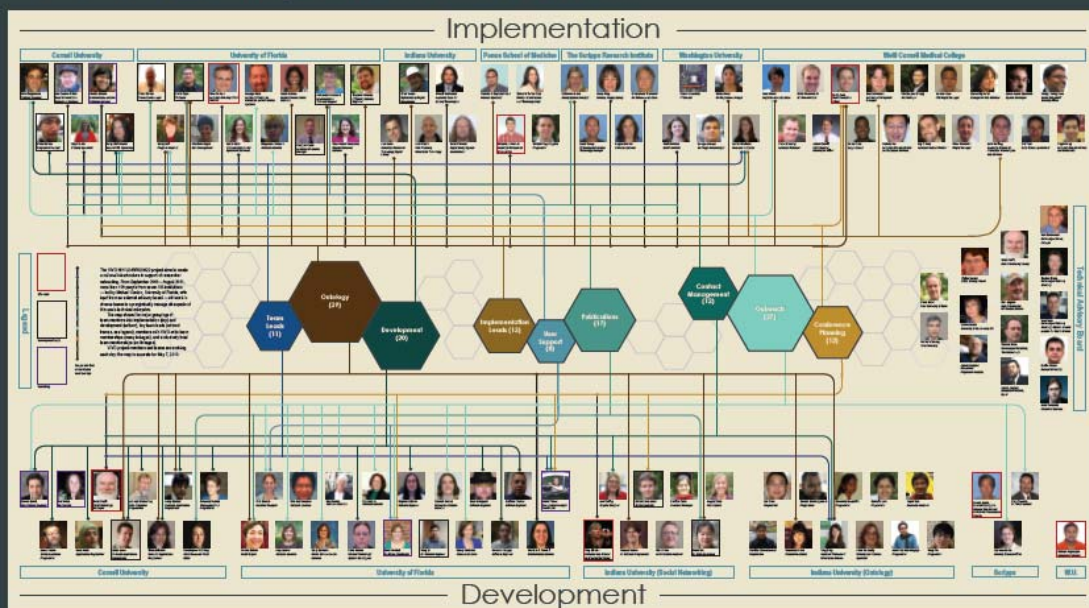
- By individual
 - Everything about an event, a grant, a person
- By type
 - Everything about a class of events, grants, or persons
- By relationship
 - Grants with PIs from different colleges or campuses
- By combinations and facets
 - Explore any publication, grant, or talk with a relationship to a concept or geographic location
 - Explore orthogonally (navigate a concept or geographic hierarchy)

[#11] VIVO National Researcher Networking

- Motivation
- Users, Their Needs, and Usage Scenarios
- Development
- Implementation
- Usage
- Outlook
- Exercise: Identify Promising VIVO Collaborations

27

VIVO Enabling National Networking of Scientists Project Members and Teams



Development

Please send comments and questions to [Janis Coffey](mailto:Janis.Coffey@indiana.edu) or design@vivo.indiana.edu and [Yulia S. Davis](mailto:Yulia.S.Davis@scripps.edu) or edward@llnwd.net. High resolution and Easy-BibTeX concepts. For more information, visit www.vivonetwork.org.

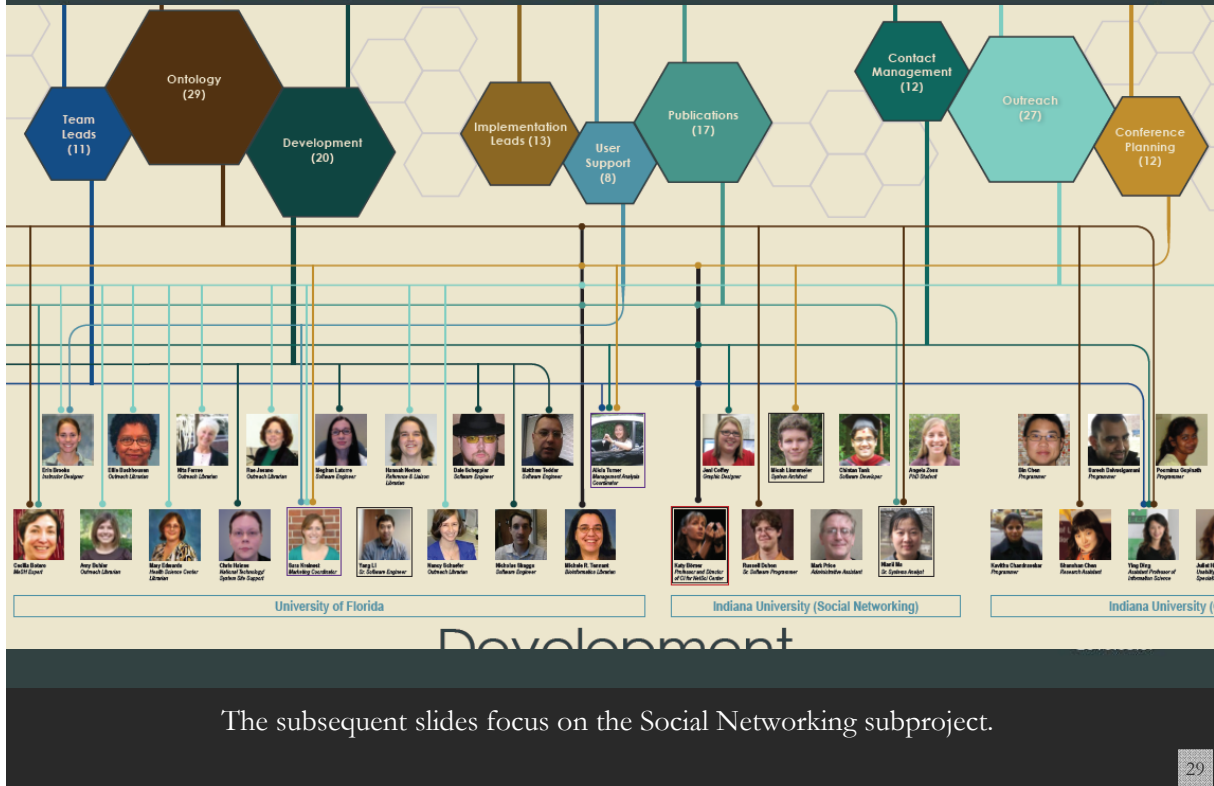
2010.05.07

There are more than 120 people working on different aspects of VIVO.

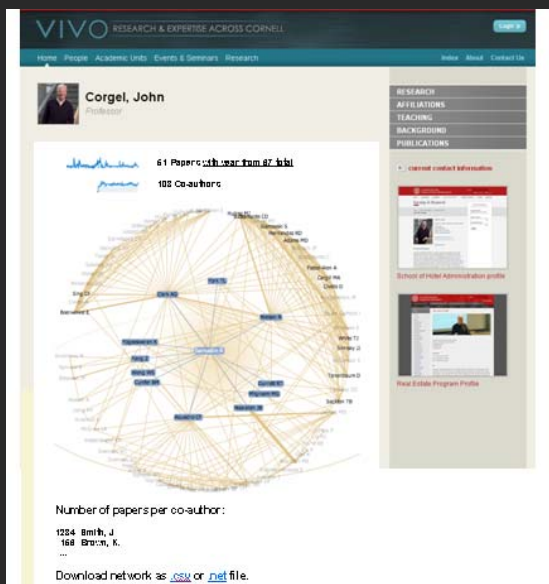
28

VIVO Enabling National Networking of Scientists

Project Members and Teams



VIVO Initial Drafts of Individual Level and Institution Level Visualizations



Individual Level VIVO Visualization – Co-Author Network
 Simple co-author network for this person using code similar to <http://www.chrisbarnison.net/vivoindex/vivodex.html>, tabular data, link to .osv or network file for further processing in NWB Tool.
 Soadlines covers all years in which publications exist but at least 10 years. Both are aligned right (today). Same max. number of papers/co-authors.
 Only local data, here Cornell, is considered.



Institution Level VIVO Visualization
 Available from the VIVO Index page are statistics such as publications/funding/courses, # of linkages, e.g., co-author, paper-citation, paper-author, etc., # downloads over time are plotted, geo and science map overlays are generated, network layouts with well defined basemap, e.g., bump charts or two lists of nodes in a bimodal network are written into a .ps file, converted into a .pdf file and are available for print. Temporal animation of growth corresponds to multiple pages (one per year) with identical reference system.
 Only local data, here Cornell, is considered. We would like to know what vjs users request.

VIVO Later Draft of Individual Level Co-Author Visualization

Corgel, John
Professor

RESEARCH
AFFILIATIONS
TEACHING
BACKGROUND

General Statistics

- 51 Papers with year from 67 total ([CSV file](#))
- 103 Unique co-authors ([CSV file](#))

Ego-Centric Co-Author Network ([NET file](#))

22 co-authors
43 co-author links

Format:
Year | # new papers in this year

Format:
Year | # new authors coming in this year | names of these unique authors

Will we have the additional info as shown here on the right?

2 Works
4 Co-author(s)
2006 First Publication
2009 Last Publication

[Go to VIVO profile](#)
[Go to ego-centric co-author network of](#)

31

[#11] VIVO National Researcher Networking

- Motivation
- Users, Their Needs, and Usage Scenarios
- Development
- Implementation
- Usage
- Outlook
- Exercise: Identify Promising VIVO Collaborations

VIVO Release 1 v. 1.1: Individual Level Co-Author Visualization



Russell Gonzalez, Sara A

Physical Sciences Librarian

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

9 publication(s) from 1998 to 2010 ([CSV File](#))

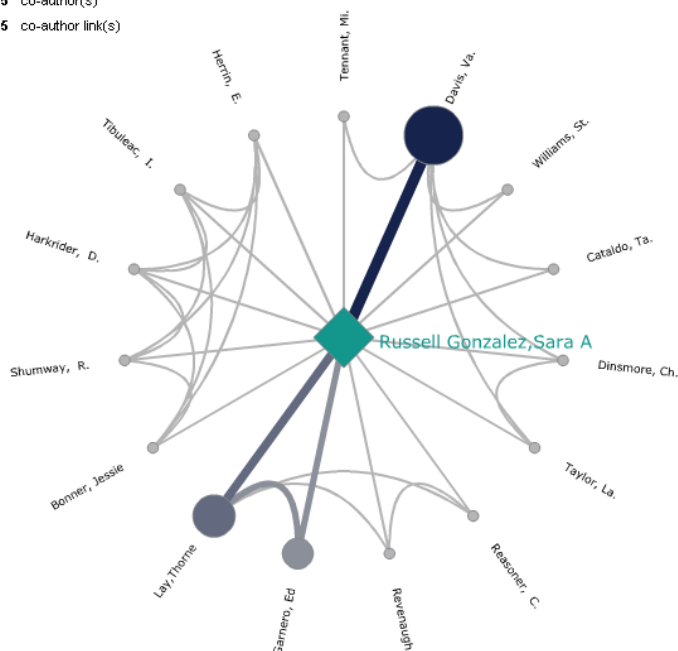
16 co-author(s) from 1998 to 2010 ([CSV File](#))

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

http://qa.vivo.ufl.edu/admin/visQuery?uri=http%3A%2F%2Fvivo.ufl.edu%2Findividual%2Fn22286&vis=person_level&render_mode=standalone

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

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



Russell Gonzalez, Sara A

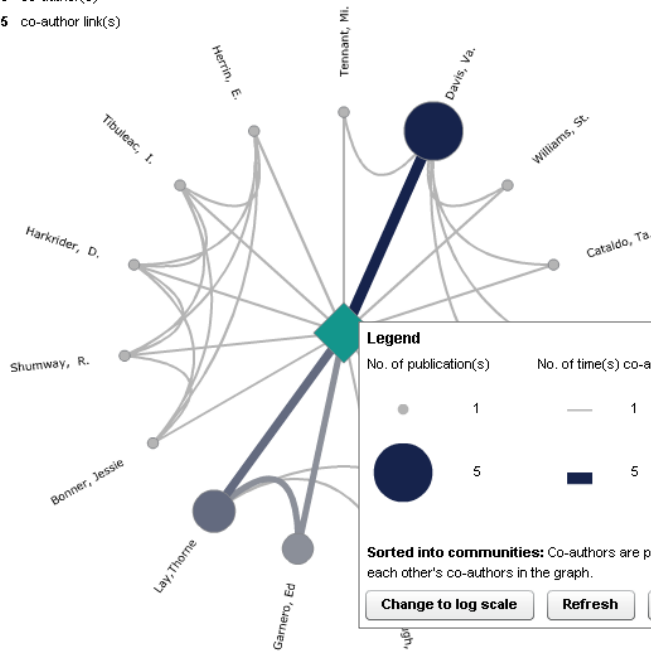
Physical Sciences Librarian
[VIVO profile](#) | [Co-author network](#)

9 Publication(s)
15 Co-author(s)
1998 First Publication
2010 Last Publication

http://qa.vivo.ufl.edu/admin/visQuery?uri=http%3A%2F%2Fvivo.ufl.edu%2Findividual%2Fn22286&vis=person_level&render_mode=standalone

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

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



Russell Gonzalez, Sara A

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

9 Publication(s)
15 Co-author(s)
1998 First Publication
2010 Last Publication

Legend

No. of publication(s)	No. of time(s) co-authored
1	1
5	5

Interact

Hover over any name to see the number of joint publications and co-authors with Russell Gonzalez, Sara A.
Click on a name to see details on the right.

Thresholding

Only people that co-authored more than 0 paper(s) with Russell Gonzalez, Sara A are shown.
0 out of 0 co-author(s) are shown.

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.

[Change to log scale](#)

[Refresh](#)

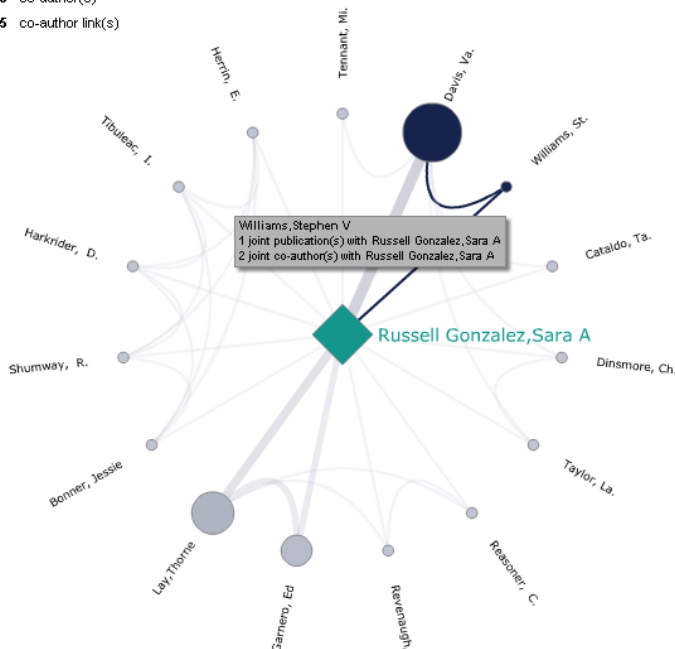
[Sort alphabetically](#)

[Save as image](#)

http://qa.vivo.usf.edu/admin/visQuery?uri=http%3A%2F%2Fvivo.usf.edu%2Findividual%2Fn22286&vis=person_level&render_mode=standalone

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

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



Williams, Stephen V

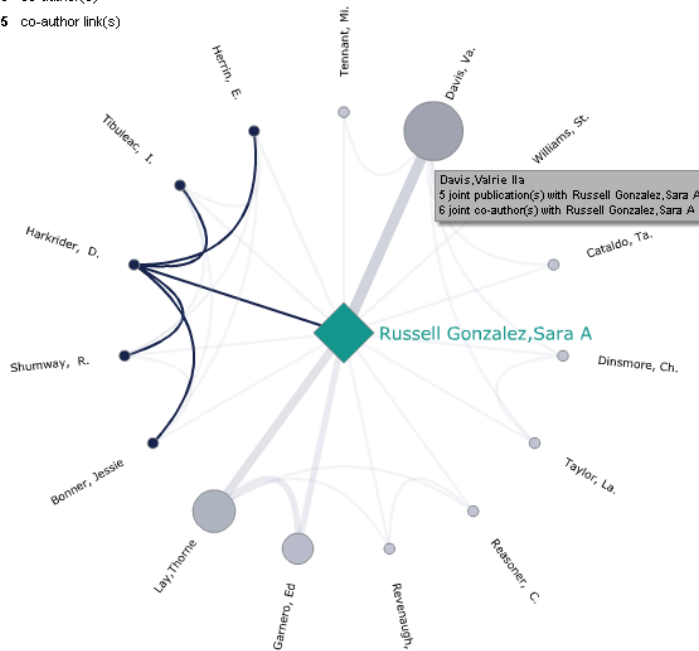
Software Engineer
[VIVO profile](#) | [Co-author network](#)

1 Joint Publication(s)
2 Joint Co-author(s)
2010 First Publication
2010 Last Publication

http://qa.vivo.usf.edu/admin/visQuery?uri=http%3A%2F%2Fvivo.usf.edu%2Findividual%2Fn22286&vis=person_level&render_mode=standalone

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

http://qa.vivo.usf.edu/admin/visQuery?uri=http%3A%2F%2Fvivo.usf.edu%2Findividual%2Fn22286&vis=person_level&render_mode=standalone

37

Borner, Katy

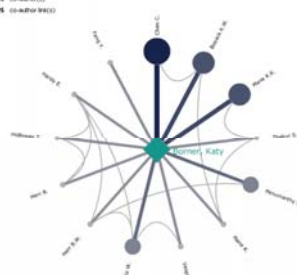
This information is based solely on publications which have been loaded into the VIVO system. This may only be a small sample of the person's total work.

General Statistics

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

Co-Author Network

13 co-author(s)
28 co-author link(s)



Borner, Katy

Profile

16 Publications
13 Co-author(s)
2007 First Publication
2007 Last Publication

Legend

No. of publication(s)

No. of link(s) (co-authored)

1 2 3 4 5

Interact

Hover over any name to see the number of past publications and co-authors with Borner, Katy.

Click on a name to see details on the right.

The thresholding

Only people that co-authored more than 1 paper(s) with Borner, Katy are shown.

13 out of 67 co-author(s) are shown.

13 out of 67 co-author(s) are shown.

Tables

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

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

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

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

Author	Publications with Borner, Katy
Chen, C.	5
Shupik, K.M.	4
Mann, K.H.	4
Ho, V.H.	3
Penumbath, S.	3
Veppaniam, Alessandro	2
Han, S.	2
Hards, E.	2
Holloway, T.	2
Han, S.H.	2
Thurner, B.	2
Fong, T.	2
Mann, H.	2

Download Data

General Statistics

- 35 publication(s) from 2001 to 2010 [\(.CSV File\)](#)
- 67 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-sls.indiana.edu/vivo1/admin/visQuery?uri=http%3A%2F%2Fvivoeb.org%2Fontology%2Fcore%2Fperson72&vis=person_level&render_mode=standalone

38

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

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

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

Year	Number	Co-Author(s)
2001	1	Chen C.
2002	3	Feng Y.; McMahon T.; Chen C.
2003	2	Chen C.; Boyack K.W.
2004	17	Lee G.J.; Jones R.J.; Martins, Emilia; Moor K.A.; Menzel S.; Sooriarmurthi R.; Ord T.; Boyack K.W.; Stamm S.;

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

```

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)

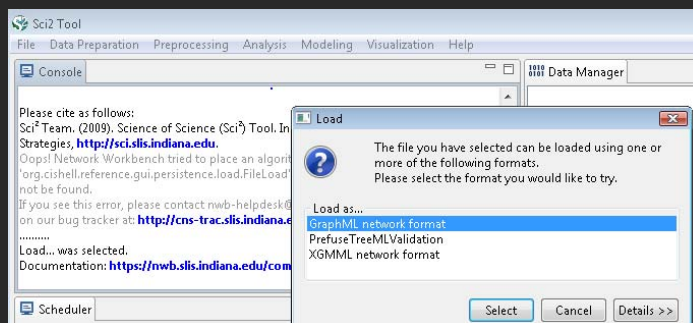
Publications per year ([.CSV File](#)), see top file.

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



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



Network Analysis Toolkit

Nodes: 68
Edges: 299

Average degree: 8.7941

Density (disregarding weights): 0.1313

Additional Densities by Numeric Attribute

densities (weighted against standard max)

num_earliest_collaboration: 0.1343

num_latest_collaboration: 0.1335

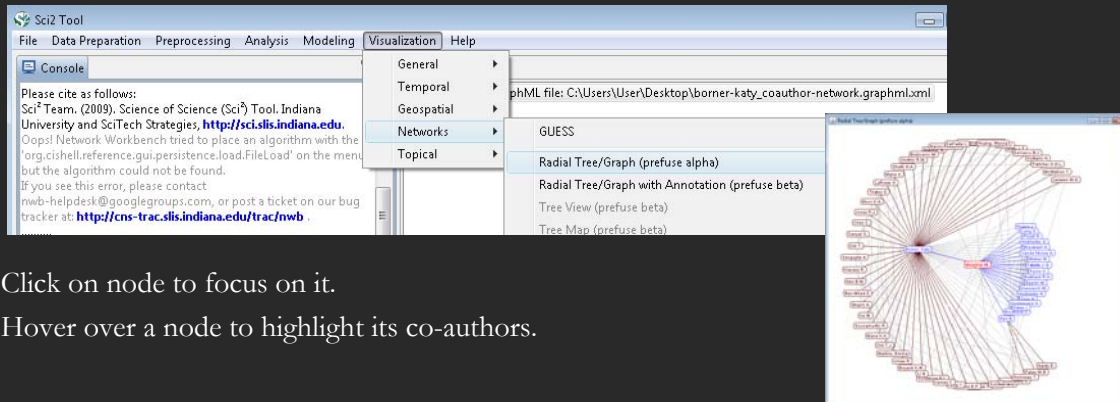
number_of_coauthored_works: 0.1409

num_unknown_collaboration: -0.1313

earliest_collaboration: 263.3332

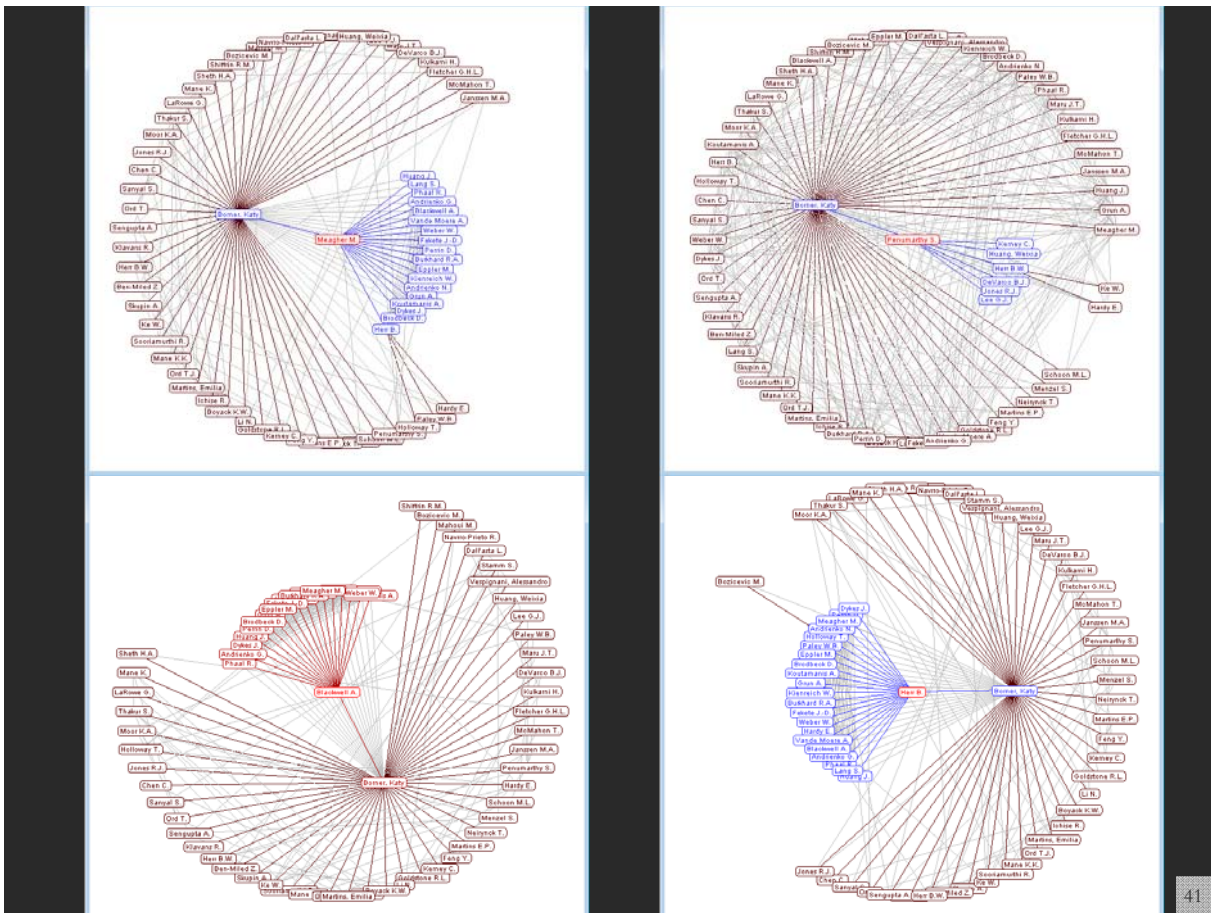
latest_collaboration: 263.3398

Visualize the file using Radial Graph layout.



Click on node to focus on it.

Hover over a node to highlight its co-authors.



#11 VIVO National Researcher Networking

- Motivation
- Users, Their Needs, and Usage Scenarios
- Development
- Implementation
- Usage
- Outlook
- Exercise: Identify Promising VIVO Collaborations

VIVO Institution Level Visualizations

people
 Cornell Acad Staff (2331)
 Cornell Academic Appointees (7296)
 Cornell Academic Staff (2323)
 Cornell Advisors (88)
 Cornell Archivist (2)
 Cornell Emeritus Professor (207)
 Cornell Faculty Member (4758)
 Cornell Graduate Student (2)
 Cornell Librarian (127)
 Cornell Non-Academic Staff (2903)
 Former Cornell employee (23)
 Former Cornell faculty member (41)
 Non-Cornell Faculty Member (41)

courses
 Cornell Semester Class (14734)

activities
 Academic Degree Granting Agent (228)
 Academic Initiative (48)
 Academic Theme Project Initiative (5)
 Administrative Service (2)
 Area of Concentration (284)
 Business Student Service (13)
 Consultation Service (2)
 Contract, Grant, or Sponsored Research Response (8)
 Dissertation Grant Program (1)
 Endowing Practicing or Performing (24)
 External Research Service (1)
 Federal Funding Fund Object (1)
 Funding Opportunities Service (3)
 Graduate Fund Program (177)
 Graduate Fund Grouping (6)

Institution Level VIVO Visualization
 Available from the VIVO Index page are statistics such as publications/funding/courses, # of linkages, e.g., co-author, paper-citation, paper-author, etc., # downloads over time are plotted, geo and science map overlays are generated, network layouts with well defined base maps, e.g., bump charts or two lists of nodes in a bimodal network are written into a .pdf file, converted into a .pdf file and are available for print. Temporal animation of growth corresponds to multiple pages (one per year) with identical reference system.
 Only local data, here Cornell, is considered. We would like to know what vis users request.

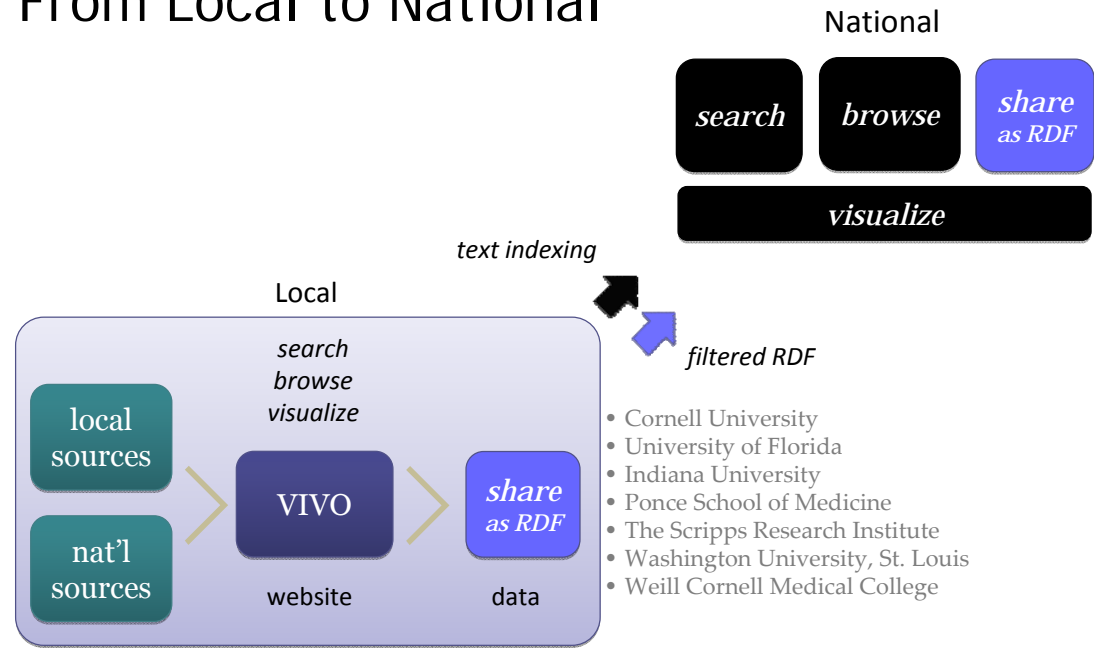
Institution Level analyses and visualization will be available from the VIVO Index page and comprise statistics such as

- publications/funding/courses,
- # of linkages, e.g., co-author,
- paper-citation, paper-author, etc.,
- # downloads over time are plotted.

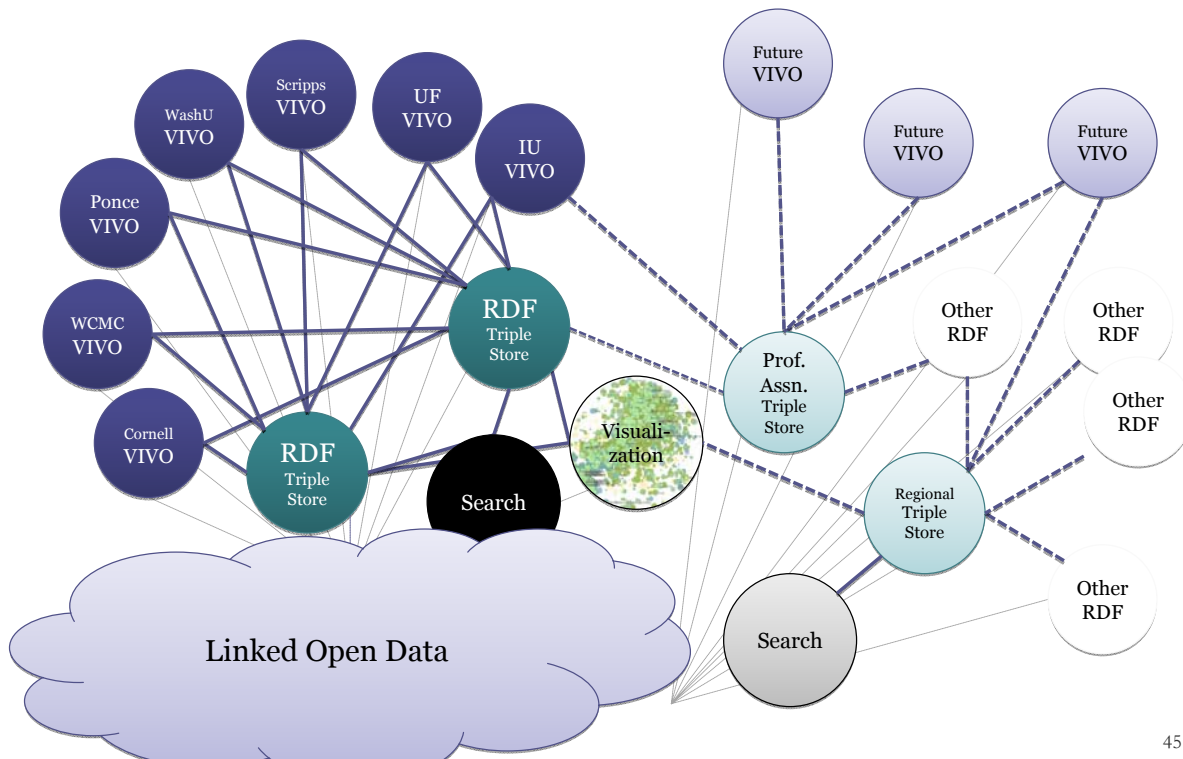
Geospatial and science map overlays as well as network layouts with well defined base maps, e.g., two lists of nodes in a bimodal network will be written into a PDF file for viewing and printing.

Temporal animation of growth corresponds to multiple pages (one per year) with identical reference system.

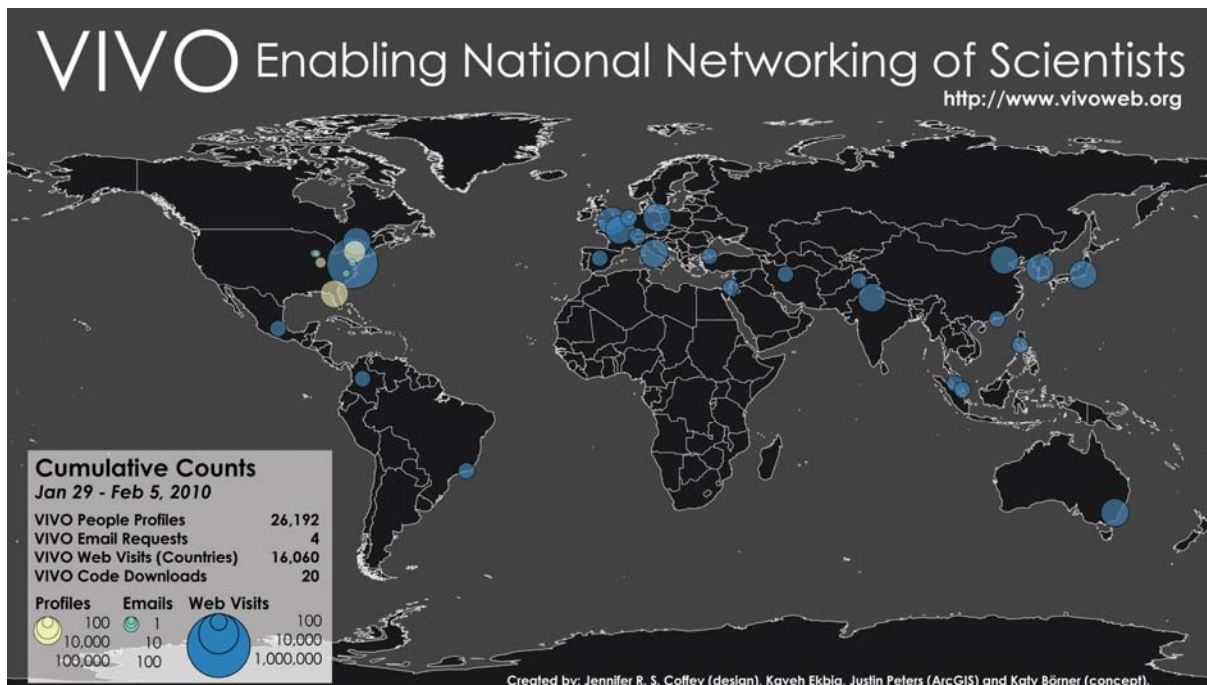
From Local to National



National Networking



45

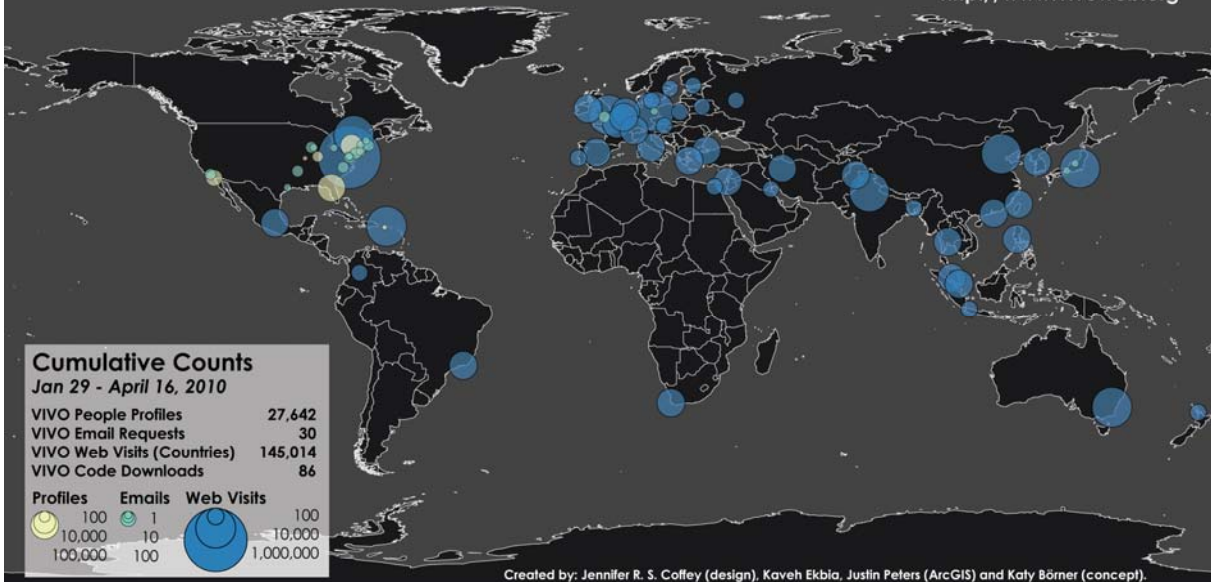


The National Research Network: VIVO: Enabling National Networking of Scientists NIH U24RR029822
 Start: Sept 2009
 PI: Michael Conlon, University of Florida
 Award amount: \$12,300,000

DRAFT

VIVO Enabling National Networking of Scientists

<http://www.vivoweb.org>



Shown are the

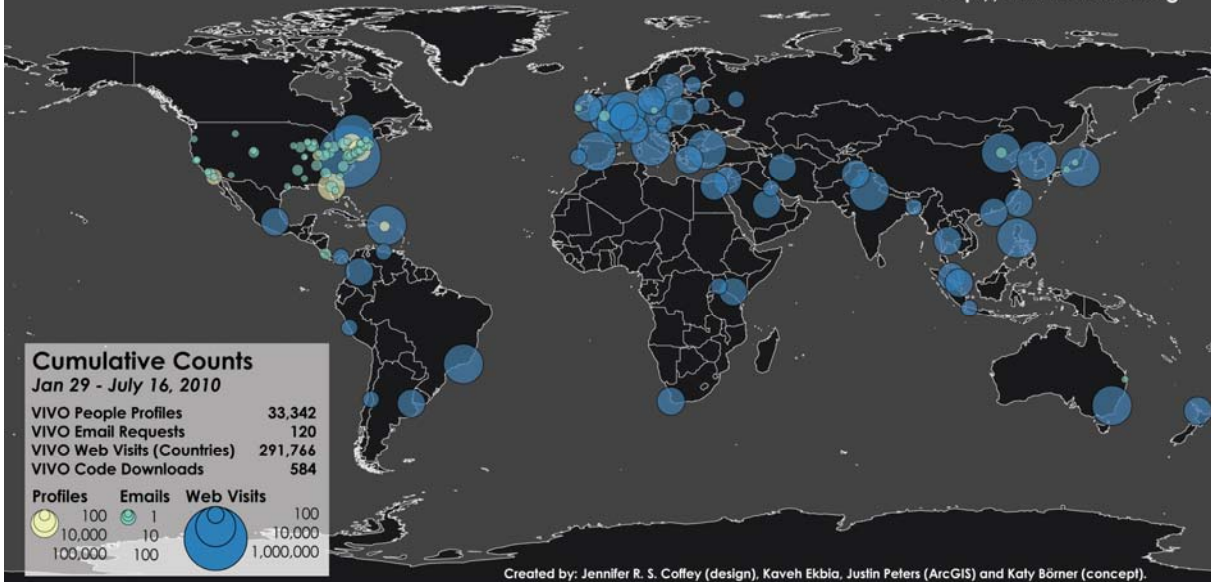
- Number of people profiles in the 7 different installation sites.
- Email contacts by data and service providers as well as institutions interested to adopt VIVO.
- The number of visitors on <http://vivoweb.org>

Circles are area size coded using a logarithmic scale.

DRAFT

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. 917 downloads on July 16, 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.

DRAFT

Email this

Register Online

CONTENTS

- › Welcome
- › Preliminary Agenda
- › Program Committee
- › Keynote Speakers
- › Conference Speakers
- › Sponsorship
- › Call for Submissions
- › Workshops and Tutorials
- › Hotel & Transportation Information
- › New York Hall of Science
- › Map of Conference Venue
- › Conference Save the Date

REGISTRATION & LOGISTICS:

Andy Campbell
tel:
 (352) 294-0847
fax: (352) 392-5437

VIVO

Enabling National Networking of Scientists

Welcome

Workshops are filling up fast – reserve your seat now!



The first annual VIVO National Conference is on August 12 & 13, 2010 at the New York Hall of Science.

The VIVO National Conference, Enabling National Networking of Scientists, will bring together scientists, developers, publishers, funding agencies, research officers, students and those supporting the development of team science.

This two-day conference will begin with workshops and tutorials for those new to VIVO, those implementing VIVO at their institutions, and those wishing to develop applications using VIVO. Keynote speakers (to be announced) will present regarding the Semantic Web, Linked Open Data and the role of VIVO in support of team science. Panelists will discuss adoption and implementation findings. Feedback sessions will engage participants in requirements gathering and brainstorming regarding future network services. Presenters will discuss mapping, social networking, crowd sourcing, support for societies and other national network applications.



For more information about the VIVO project and national networking, please visit <http://vivoweb.org>

For content information about the VIVO conference, please click the following link: [VIVO](http://conferences.dce.ufl.edu/vivo)

<http://conferences.dce.ufl.edu/vivo>

Email this

Register Online

CONTENTS

- › Welcome
- › Preliminary Agenda
- › Program Committee
- › Keynote Speakers
- › Conference Speakers
- › Sponsorship
- › Call for Submissions
- › Workshops and Tutorials
- › Hotel & Transportation Information
- › New York Hall of Science
- › Map of Conference Venue
- › Conference Save the Date

REGISTRATION & LOGISTICS:

VIVO

Enabling National Networking of Scientists

Workshops and Tutorials

VIVO Data Analysis and Visualization Services: How to Program, Extend, and Utilize

Instructors: Micah Linnemeier, Chintan Tank, Nianli Ma, and Katy Börner
Cyberinfrastructure for Network Science Center, Indiana University

Through the VIVO project, high quality academic data from systems of record becomes available in a common format through Semantic Web technologies. Data that was previously difficult to access and combine becomes available to anyone, creating a unique opportunity for academic and industry stakeholders to utilize this data in conjunction with their own areas of expertise. The most compelling uses of VIVO data might come from 3rd-party developers creating analyses, applications, and services that meet their specific needs.

This hands-on workshop aims to empower participants to understand, access, and utilize VIVO data for administrative, commercial, or research purposes. It starts with a brief overview of techniques and workflows used to analyze and visualize temporal, geospatial, topical, and network datasets at a micro, meso, and macro level. Emphasis is on the design of insightful visualizations. Next, we will present the general VIVO architecture and explain and demonstrate different options to access and work with VIVO data and to use or extend VIVO code drawing on Indiana University's experience with VIVO service development. All services and applications are documented at a level of detail that makes it easy for others to replicate and extend them.

<http://conferences.dce.ufl.edu/vivo>

Main goal of the Social Networking team is to empower others to write useful VIVO applications and services.



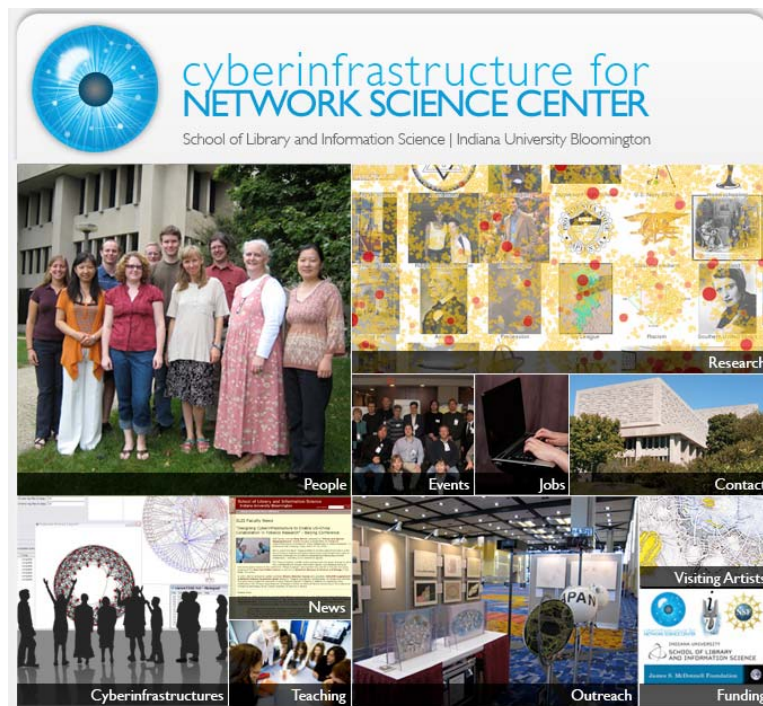
Exercise

Please identify promising VIVO usages and/or collaborations.

Document it by listing

- Project title
- User, i.e., who would be most interested in the result?
- Insight need addressed, i.e., what would you/user like to understand?
- Data used, be as specific as possible.
- Analysis algorithms used.
- Visualization generated. Please make a sketch with legend.

53



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

54