



VIVO

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VIVO International Researcher Network

Katy Börner, CNS, IU, USA

VIVO Workshop, KNAW, Amsterdam, The Netherlands
January 18, 2013

VIVO Team: **Cornell University:** Dean Krafft (Cornell PI), Manolo Bevia, Jim Blake, Nick Cappadona, Brian Caruso, Jon Corson-Rikert, Elly Cramer, Medha Devare, John Ferreira, Brian Lowe, Stella Mitchell, Holly Mistlebauer, Anup Sawant, Christopher Westling, Rebecca Younes. **University of Florida:** Mike Conlon (VIVO and UF PI), Cecilia Botero, Kerry Britt, Erin Brooks, Amy Buhler, Ellie Bushhousen, Chris Case, Valrie Davis, Nita Ferree, Chris Haines, Rae Jesano, Margeaux Johnson, Sara Kreinest, Yang Li, Paula Markes, Sara Russell Gonzalez, Alexander Rockwell, Nancy Schaefer, Michele R. Tennant, George Hack, Chris Barnes, Narayan Raum, Brenda Stevens, Alicia Turner, Stephen Williams. **Indiana University:** Katy Börner (IU PI), William Barnett, Shanshan Chen, Ying Ding, Russell Duhon, Jon Dunn, Micah Linnemeier, Nianli Ma, Robert McDonald, Barbara Ann O'Leary, Mark Price, Yuyin Sun, Alan Walsh, Brian Wheeler, Angela Zoss. **Ponce School of Medicine:** Richard Noel (Ponce PI), Ricardo Espada, Damaris Torres. **The Scripps Research Institute:** Gerald Joyce (Scripps PI), Greg Dunlap, Catherine Dunn, Brant Kelley, Paula King, Angela Murrell, Barbara Noble, Cary Thomas, Michaeleen Trimarchi. **Washington University, St. Louis:** Rakesh Nagarajan (WUSTL PI), Kristi L. Holmes, Sunita B. Koul, Leslie D. McIntosh. **Weill Cornell Medical College:** Curtis Cole (Weill PI), Paul Albert, Victor Brodsky, Adam Cheriff, Oscar Cruz, Dan Dickinson, Chris Huang, Itay Klaz, Peter Michelini, Grace Migliorisi, John Ruffing, Jason Specland, Tru Tran, Jesse Turner, Vinay Varughese.

Type of Analysis vs. Level of Analysis



	<i>Micro/Individual (1-100 records)</i>	<i>Meso/Local (101-10,000 records)</i>	<i>Macro/Global (10,000 < records)</i>
<i>Statistical Analysis/Profiling</i>	Individual person and their expertise profiles	Larger labs, centers, universities, research domains, or states	All of NSF, all of USA, all of science.
<i>Temporal Analysis (When)</i>	Funding portfolio of one individual	Mapping topic bursts in 20-years of PNAS	113 Years of physics Research
<i>Geospatial Analysis (Where)</i>	Career trajectory of one individual	Mapping a state's intellectual landscape	PNAS publications
<i>Topical Analysis (What)</i>	Base knowledge from which one grant draws.	Knowledge flows in Chemistry research	VxOrd/Topic maps of NIH funding
<i>Network Analysis (With Whom?)</i>	NSF Co-PI network of one individual	Co-author network	NSF's core competency

VIVO Enabling a National Network of Scientists

Home People Organizations Research Events

Davis, Vairie I | AST UNV LIBRA

Positions

- Medical Science Librarian**, Outreach Librarian for Agricultural Sciences (2002 - 2003)
- Medical Science Librarian**, Stark Maintenance Supervisor (2001 - 2002)
- AST UNV LIBRARIAN**

13 publications within the last 10 years (11 leads)

17 identifiers

1512772989

Primary Web Page

Medical Science Librarian (2011 - 2012)

Affiliations Publications Research Backgrounds Contact Other

Affiliation

professional title: Outreach Librarian for Agricultural Sciences

VIVO Enabling a National Network of Scientists

Home People Organizations Research Events

University of Florida

How do you want to compare?
by Publications

Who do you want to compare?
Search: [] X

Records 1 - 10 of 13

Entity Name	Publications	Entity Type
<input checked="" type="checkbox"/> Interdisciplinary Center for Research	18	UF Center, Agent, Center
<input checked="" type="checkbox"/> Continuing Education	24	UF Department, Agent, Non-Academic Department
<input checked="" type="checkbox"/> Levin College of Law	17	Agent, UF College, College
<input checked="" type="checkbox"/> College of Agricultural and Life Sciences	14	Agent, UF College, College
<input type="checkbox"/> Whittier College of Business Administration	14	Agent, UF College, College
<input type="checkbox"/> Evelyn F. and William L. McKnight Brain Institute of the University of Florida	8	UF Center, Agent, Center

Comparing Publications of Organizations in University of Florida

Total Number of Publications

You have selected 4 of a maximum 10 organizations to compare. **Clear**

- College of Agricultural and Life Sciences: 14
- Levin College of Law: 17
- Continuing Education: 24
- Interdisciplinary Center: 18

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Home People Organizations Research Events

Search results for 'geriatrics'

Show only results of this type: **people activities organizations research**

AMERICAN GERIATRICS SOCIETY

- Geriatrics Education Curriculum, Residents (GEC) Program
- Evidence Based Decision Making in Geriatric Geriatrics Disability

AMERICAN GERIATRICS SOCIETY

- Harford Geriatrics Leadership Scholar
- Geriatric and Aging Research Institute on Aging (GRI)
- AGS ON GERIATRICS ACADEMIC PROGRAMS
- US OLTH RESOURCES AND SERVICES ADMIN
- Suburban Study
- 2003 Scholar, Harford Institute of Geriatric Nursing Research, John A. Harford Institute for Geriatric Nursing, New York University
- Gene, Rehabilitation and Prevention of Disability
- Insulinemia in the Sea Surface Echin
- Cardiac Mitral Valve Disease and Mitral Regurgitation
- AMES ACAD OF NURSING
- The Epidemiology of Stress and the Menopausal Syndrome
- Statement by a Sea Surface Echin

VIVO Enabling a National Network of Scientists

Home People Organizations Research Events

Welcome to VIVO

VIVO is a research-focused discovery tool that enables collaboration among scientists across all disciplines.

Browse or search information on people, departments, courses, grants, and publications.

Search VIVO

Log in

Email: []

ORCID: []

Password: []

Remember me: []

Log in

Browse by

- Grants (11,814)
- People (48,721)
- Activities (11,818)
- Courses (1116)
- Events (379)
- Organizations (20,328)
- Research (11,283)
- Locations (376)
- Faculty Member (8882)
- Graduate Student (1)
- Librarian (67)
- Non-Academic (7536)
- Non-Faculty Academic (1)
- Active (8972)
- Professor Emeritus (802)

UF Clinical and Translational Science Institute
UNIVERSITY of FLORIDA

University of Florida

How do you want to compare?
by Grants

Who do you want to compare?
Search: [] X

Records 1 - 10 of 30

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

Comparing Grants of Organizations in University of Florida

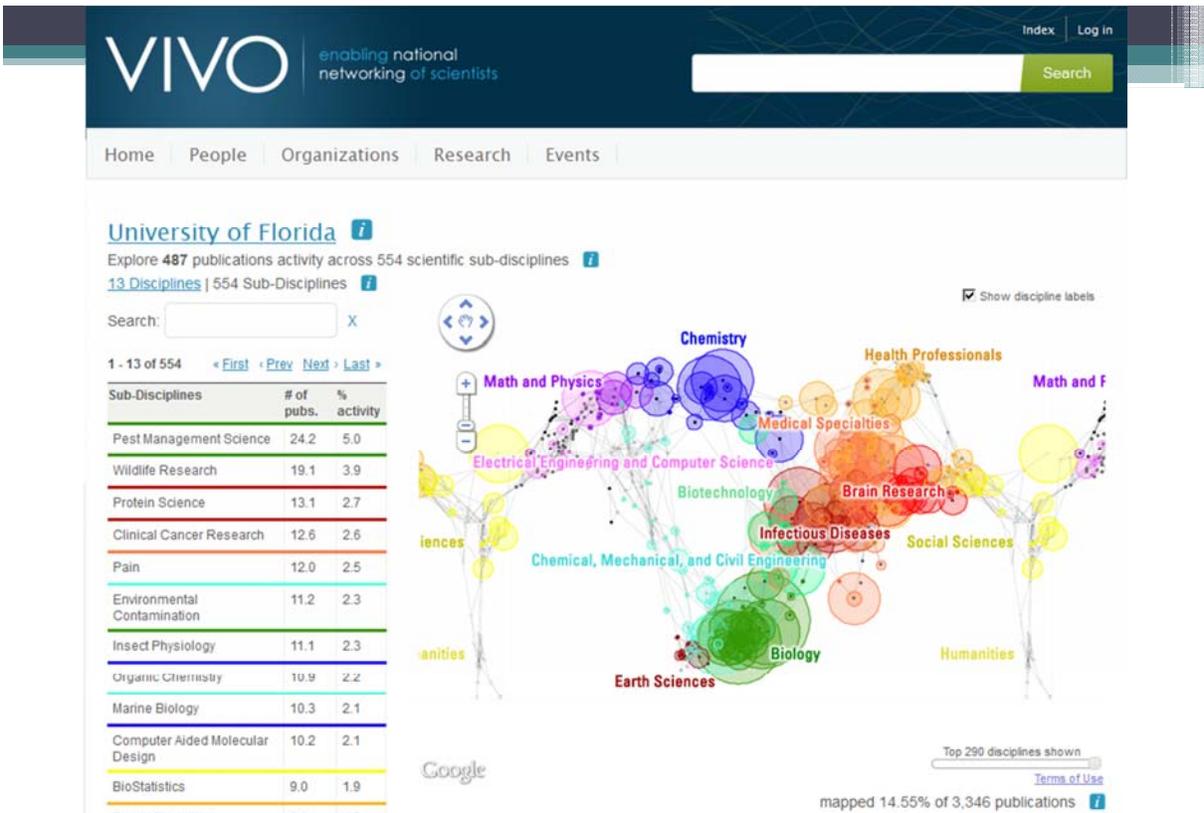
Total Number of Grants

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

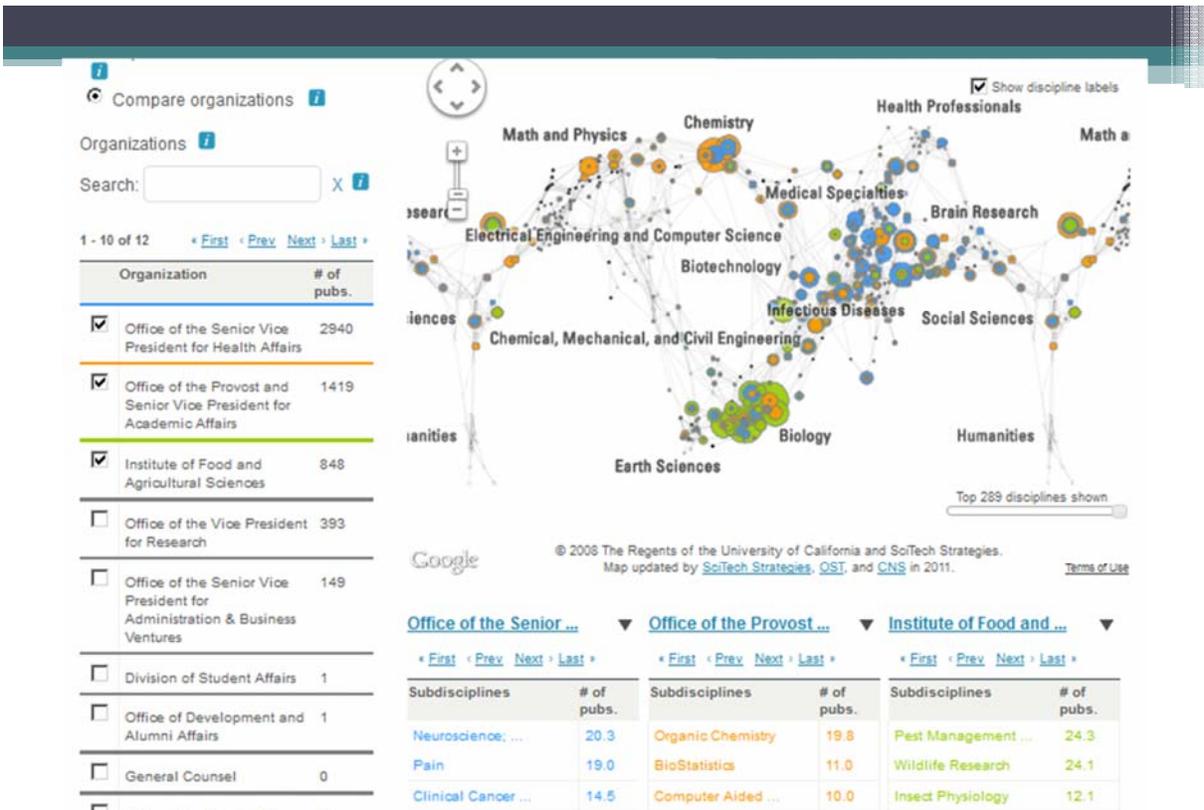
- Florida Sea Grant: 44
- International Center: 54
- Evelyn F. and William L. McKnight Brain Institute of the University of Florida: 64
- College of Engineering: 103
- College of Agricultural and Life Sciences: 166
- Florida Museum of Natural History: 203
- Continuing Education: 562

Save as CSV **Clear**

Temporal Analysis (When) Temporal visualizations of the number of papers/funding awarded at the institution, school, department, and people level



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



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

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

Refresh Sort alphabetically Save as image

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Network Analysis (With Whom?) Who is co-authoring, co-investigating, co-inventing with whom? What teams are most productive in what projects? 7

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VIVO On-The-Go

**Overview, Interactivity,
Details on Demand**
come to
commonly
used devices
and environments



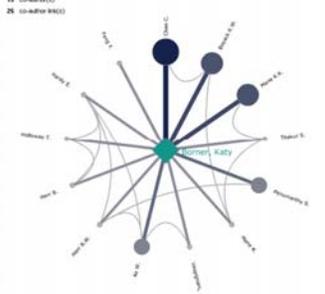
Borner, Katy
 Person

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 publication(s) from 2001 to 2010 (.CSV File)
 80 co-author(s) from 2001 to 2010 (.CSV File)

Co-Author Network
 (.GraphML File)



Legend

No. of publication(s) 1 2 3 4 5
 No. of (total) 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.

Thresholding

Only people that co-authored more than 1 paper(s) with Borner, Katy are shown. 13 out of 87 co-authors are shown. Only those who frequently collaborate with each other and each other's co-authors are in the graph.

Tables

Publications per Year (.CSV File)
 Co-author (.CSV File)

Year	Count	Co-Author(s)
2001	2	Chen C.
2002	4	Chen C.; McMahon T.; Feng Y.
2003	2	Chen C.; Boyack K.W.
2004	7	Sengupta A.; Penumarthi S.; Thakur S.; Sooriamurthi R.; Maru J.T.; Shiffrin R.M.; Mane K.; Moor K.A.
2005	7	
2006	3	
2007	10	
2010	1	

Using Data from VIVO

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.iu.edu/vis/author-network/person25557>

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.; Penumarthi S.; Thakur S.; Sooriamurthi R.; Maru J.T.; Shiffrin R.M.; Mane K.; Moor K.A.

Co-author network (.GraphML File)

```

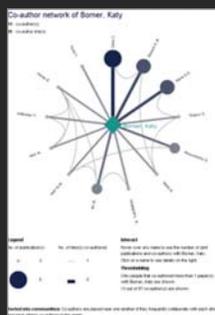
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4 xsi:schemaLocation="http://graphml.graphdrawing.org/xmlns
5 http://graphml.graphdrawing.org/xmlns/1.0/graphml.xsd">
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8 <key id="num_unknown_publication" for="node" attr.name="num_unknown_publication" 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



VIVO enabling national networking of scientists

Index | Log in

Search

Home | People | Organizations | Research | Events | Index | Help

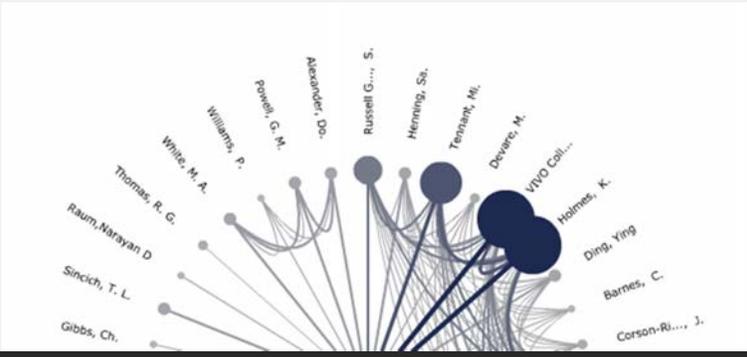
Conlon, Michael  [Co-Investigator Network](#)

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

Profile



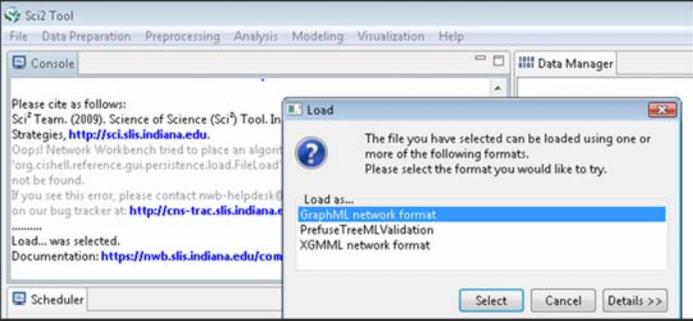
Conlon, Michael
[VIVO profile](#)
 148 Publication(s)
 37 Co-author(s)
 1977 First Publication



<https://vivo.ufl.edu/vis/author-network/n25562>

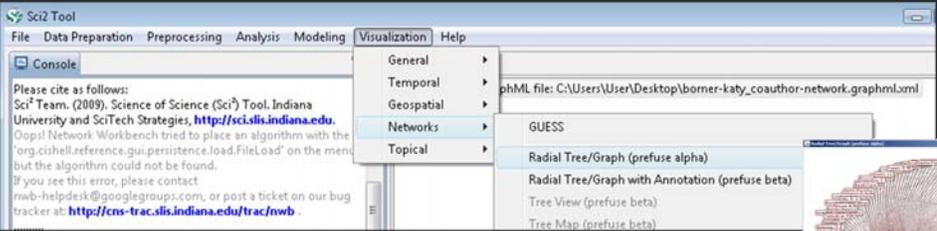
11

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



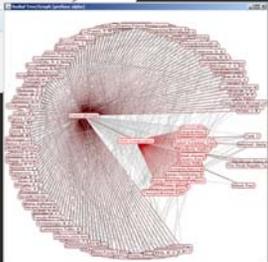
Network Analysis Toolkit
 Nodes: 81
 Edges: 390

Visualize the file using Radial Graph layout.

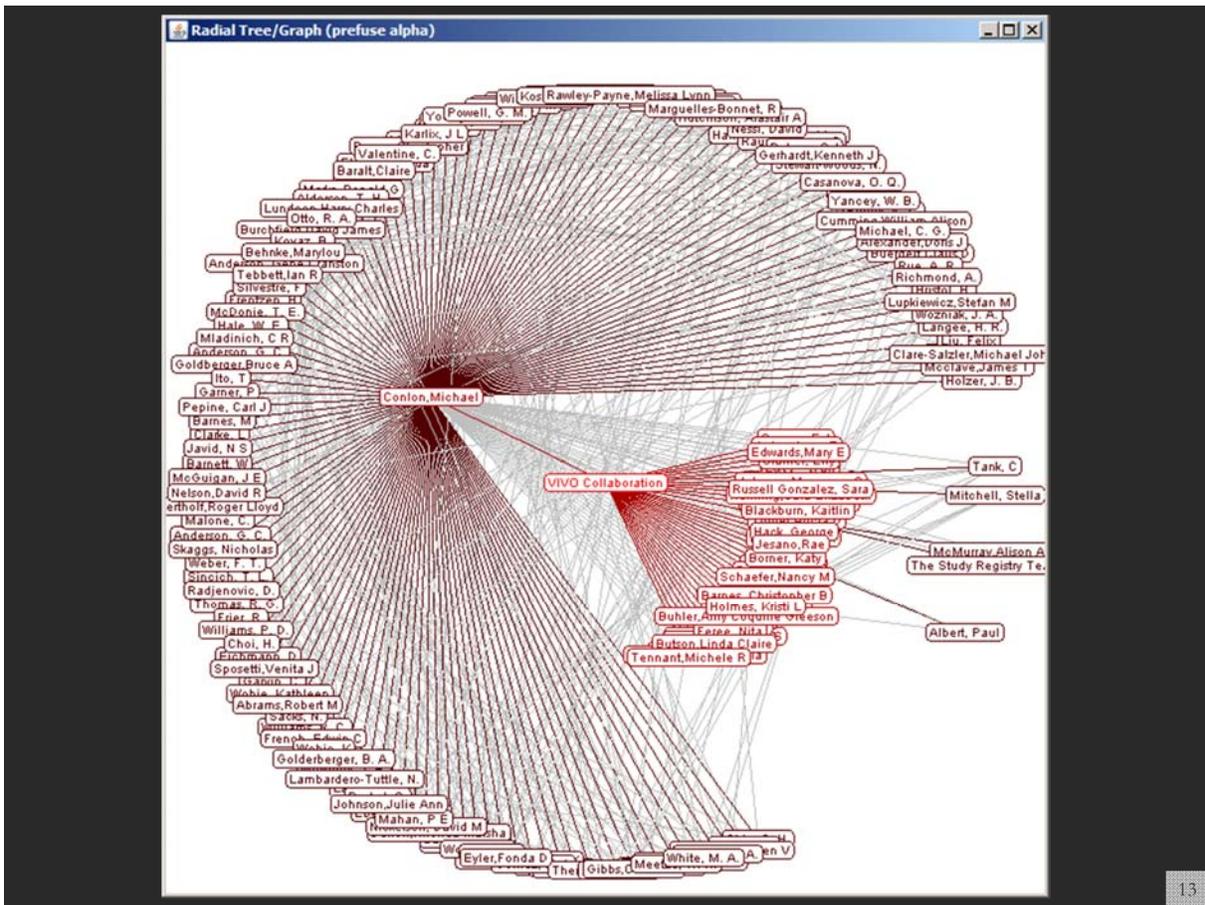


Click on node to focus on it.
 Hover over a node to highlight its co-authors.

Code and tutorials are linked from <http://sci2.wiki.cns.edu>



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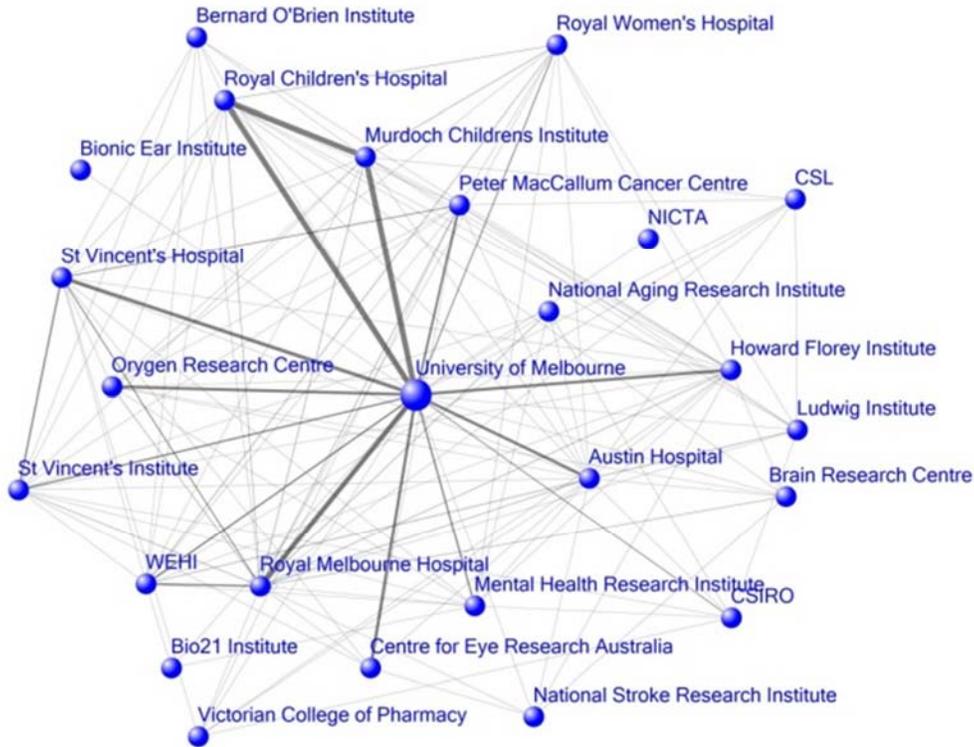


13

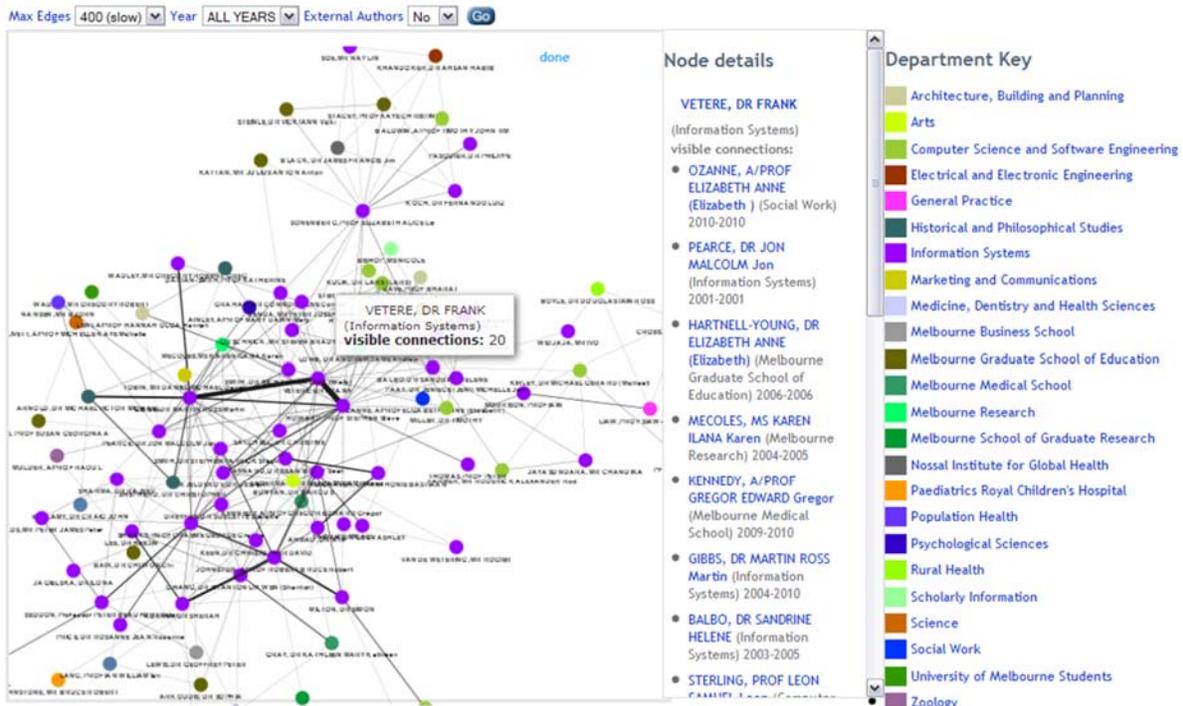


Geospatial Analysis (Where?) Where are what NRN instances and what data holdings do they have?

14

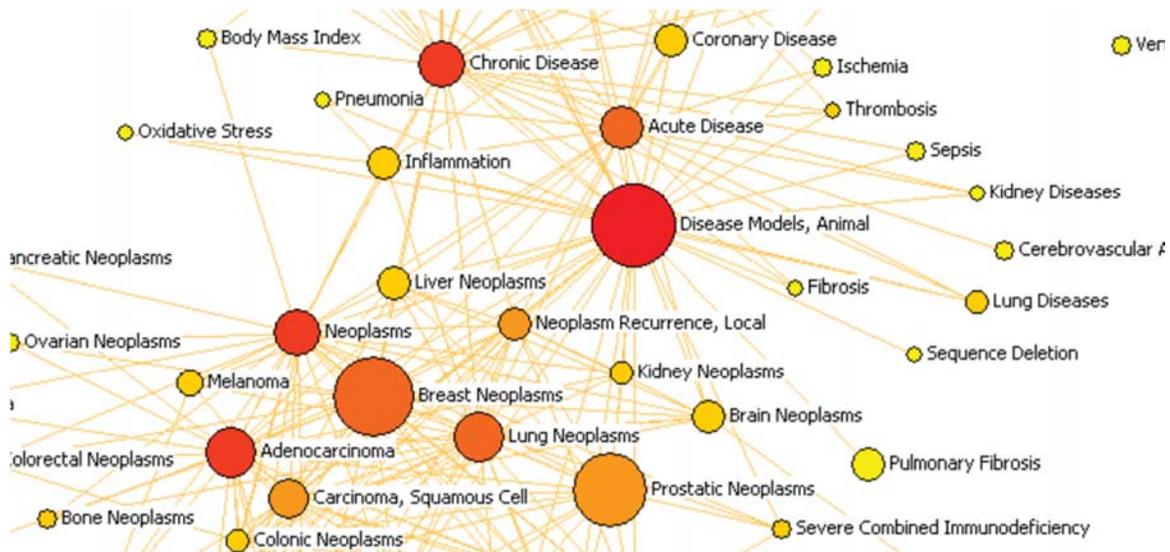


2008 collaboration patterns for medical institutions located close to Melbourne University
 Source: Web of Science co authorship information. Compiled by Simon Porter



Co-authorship network for the department of Information Systems

Source: Melbourne Research Windows. Contact Simon Porter simon.porter@unimelb.edu.au

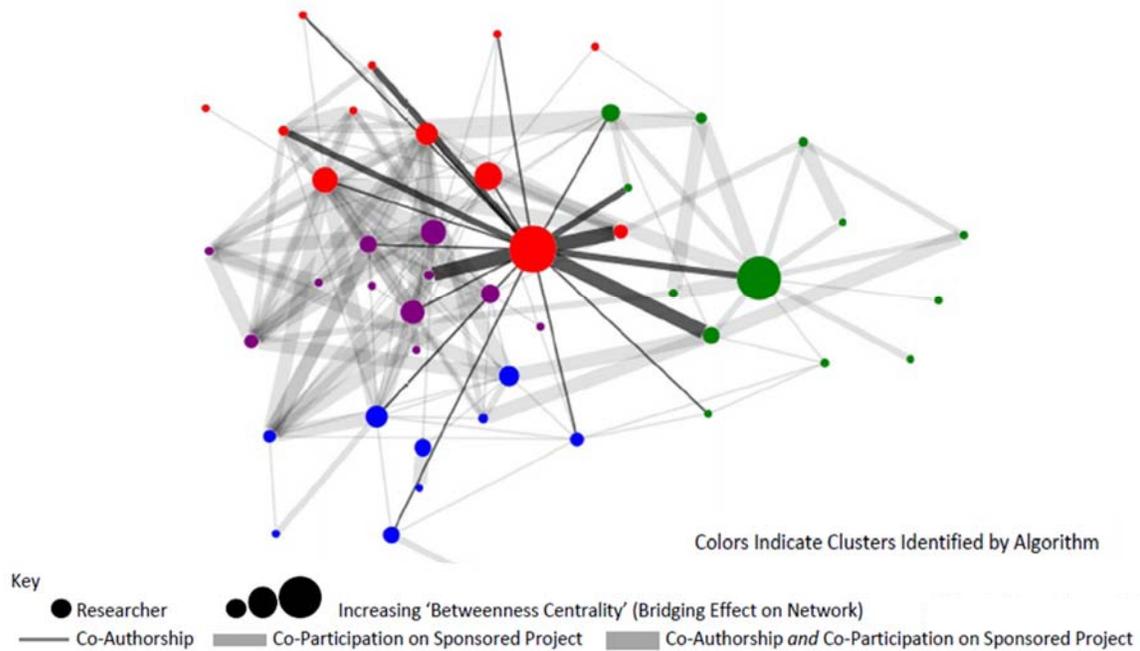


Top MeSH Disease Concepts Appearing in PubMed Publications by the University of Michigan Medical School. Links connect concepts where 100+ authors published about both concepts within the span of their careers.

This visualization revealed that animal disease models were central to disease research at U-M which encouraged additional thought and attention to animal husbandry, animal expenses, and core/shared services overall.

Contact: Jeffrey Horon, J.Horon@elsevier.com

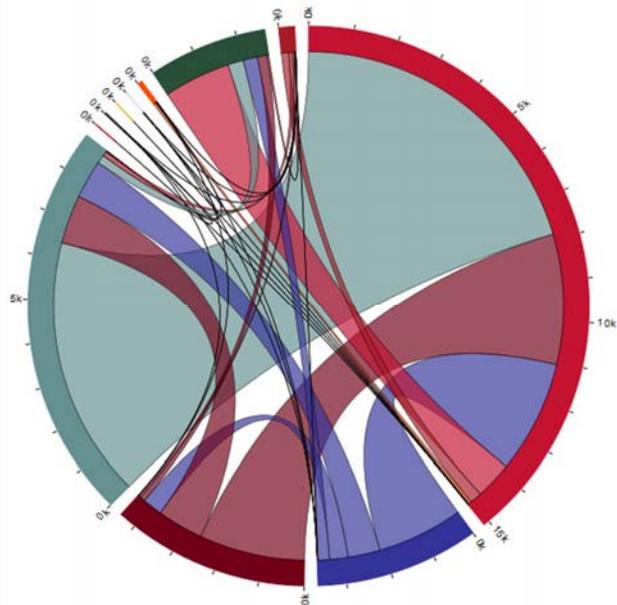
19



P30 Member Collaborations – Sponsored Project Co-Participation and Co-Authorship Network. Used in **successful!** P30 funding application. Shows the PI's relationships with various P30 members, conveying that the PI was not only the formal center of the group but also the informal center and the person who exhibited the highest betweenness centrality. Contact: Jeffrey Horon, J.Horon@elsevier.com

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Institutions		
<input checked="" type="checkbox"/>	Harvard Med School	(15124)
<input checked="" type="checkbox"/>	Northwestern Med School	(3630)
<input checked="" type="checkbox"/>	U. of Minnesota	(4388)
<input checked="" type="checkbox"/>	U. California at San Fran	(8874)
<input checked="" type="checkbox"/>	Cornell	(1)
<input checked="" type="checkbox"/>	Cornell Medical	(32)
<input checked="" type="checkbox"/>	Ponce School of Med	(3)
<input checked="" type="checkbox"/>	Scripps Research Institute	(22)
<input checked="" type="checkbox"/>	Univ. of Florida	(100)
<input checked="" type="checkbox"/>	Washington U at St. Louis	(2635)
<input checked="" type="checkbox"/>	Mendeley	(352)



Inter-Institutional Collaboration Explorer

This visualization shows information about “collaborative publications” found at 2 or more Researcher Networking websites.

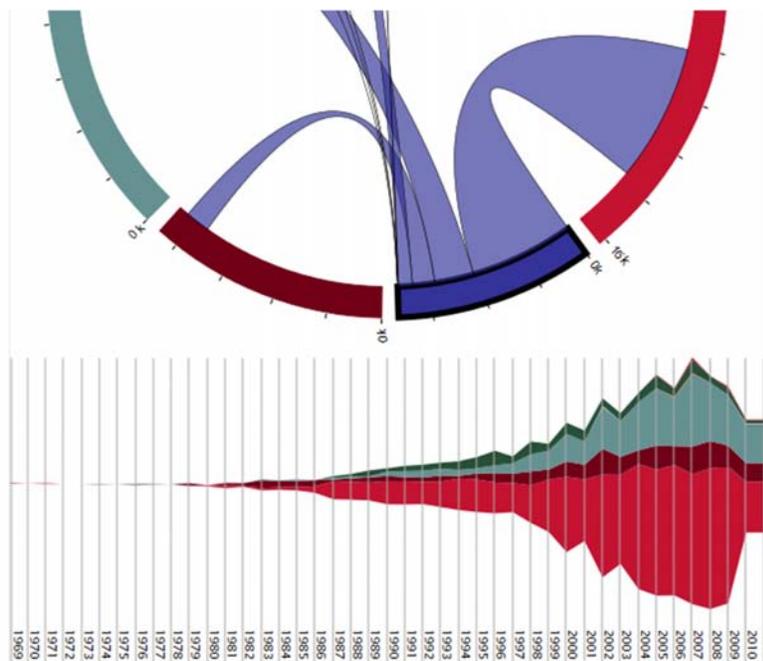
The idea that institutions don't work together and that biomedical research is conducted in silos is not true. Researchers, even when separated by great distances, are in fact willing to work together, and this visualization demonstrates that they often do.

Contact: Nick Benik (nbenik@gmail.com), Harvard Medical School, Boston, MA.

URL: <http://xcite.hackerceo.org/VIVOviz>

21

Institutions		
<input checked="" type="checkbox"/>	Harvard Med School	(1813)
<input checked="" type="checkbox"/>	Northwestern Med School	(3630)
<input checked="" type="checkbox"/>	U. of Minnesota	(396)



Inter-Institutional Collaboration Explorer

The outer solid colored arcs represent the 11 institutions. The size of the arc is proportional to the number of collaborative publications found on the site. The inner colored bands represent the number of collaborative publications found between the two institutions that each band connects. Clicking an institution's arc will hide any bands not connected to that institution and will display a timeline of when that institution's collaborative publications were written.

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VIVO: A Semantic Approach to Scholarly Networking and Discovery

Katy Börner¹, Michael Conlon², Jon Corson-Rikert¹, and Ying Ding³
Indiana University¹, University of Florida², and Cornell University³

Series: *Synthesis Lectures on the Semantic Web: Theory and Technology*
Series Editors: James Hendler, Rensselaer Polytechnic Institute
Ying Ding, Indiana University

The world of scholarship is changing rapidly. Increasing demands on scholars, the growing size and complexity of questions and problems to be addressed, and advances in sophistication of data collection, analysis, and presentation require new approaches to scholarship. A ubiquitous, open information infrastructure for scholarship, consisting of linked open data, open-source software tools, and a community committed to sustainability are emerging to meet the needs of scholars today.

This book provides an introduction to VIVO, <http://vivoweb.org/>, a tool for representing information about research and researchers—their scholarly works, research interests, and organizational relationships. VIVO provides an expressive ontology, tools for managing the ontology, and a platform for using the ontology to create and manage linked open data for scholarship and discovery. Begun as a project at Cornell and further developed by an NIH funded consortium, VIVO is now being established as an open-source project with community participation from around the world. By the end of 2012, over twenty countries and fifty organizations will provide information in VIVO format on more than one million researchers and research staff, including publications, research resources, events, funding, courses taught, and other scholarly activity.

The rapid growth of VIVO and of VIVO-compatible data sources speaks to the fundamental need to transform scholarship for the twenty-first century.

<http://www.morganclaypool.com/toc/wbe.1/1/1>

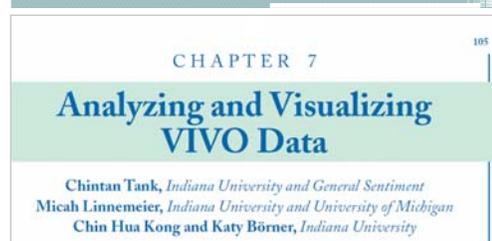


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23

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.



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Information Visualization MOOC



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.

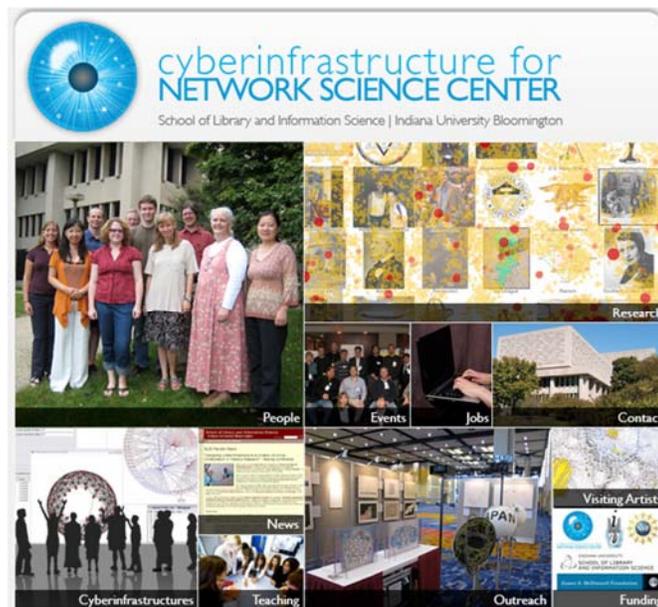
A certificate will be issued upon successful completion. Please watch the introduction video to get better acquainted with the course.

Katy Börner, Ph.D.
Indiana University



Sign Up For The Course

Register for free at <http://ivmooc.cns.iu.edu>. Class starts on Jan 22, 2013.



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>