



# **Social Networking: National Priorities, Deep Science, Extreme Technology**

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Founding Director (1983-2000), Human-Computer Interaction Lab  
Professor, Department of Computer Science  
Member, Institute for Advanced Computer Studies



UNIVERSITY OF  
**MARYLAND**





HUMAN COMPUTER  
INTERACTION  
LABORATORY



Interdisciplinary research community

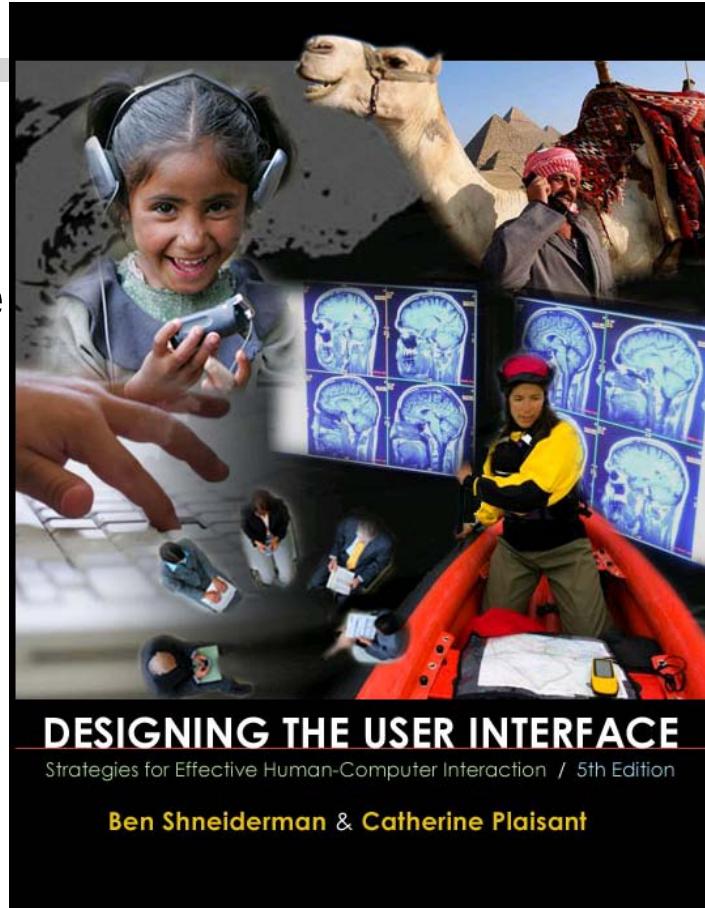
- Computer Science & Info Studies
- Psych, Socio, Poli Sci & MITH

([www.cs.umd.edu/hcil](http://www.cs.umd.edu/hcil))



# Design Issues

- Input devices & strategies
  - Keyboards, pointing devices, voice
  - Direct manipulation
  - Menus, forms, commands
- Output devices & formats
  - Screens, windows, color, sound
  - Text, tables, graphics
  - Instructions, messages, help
- Collaboration & Social Media
- Help, tutorials, training
- Search      ● Visualization



**DESIGNING THE USER INTERFACE**

Strategies for Effective Human-Computer Interaction / 5th Edition

Ben Shneiderman & Catherine Plaisant

[www.awl.com/DTUI](http://www.awl.com/DTUI)

**Fifth Edition: 2010**



# HCI Pride: Serving 5B Users



## Mobile, desktop, web, cloud

- **Diverse users:** novice/expert, young/old, literate/illiterate, abled/disabled, cultural, ethnic & linguistic diversity, gender, personality, skills, motivation, ...
- **Diverse applications:** E-commerce, law, health/wellness, education, creative arts, community relationships, politics, IT4ID, policy negotiation, mediation, peace studies, ...
- **Diverse interfaces:** Ubiquitous, pervasive, embedded, tangible, invisible, multimodal, immersive/augmented/virtual, ambient, social, affective, empathic, persuasive, ...



# Next Goal

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## Apply social media to transform society

- Improve medical care, health/wellness
- Promote energy & water conservation
- Prevent disasters & terrorism
- Increase community safety
- Improve education
- Facilitate good government
- Resolve conflicts



# Challenges

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- Malicious attacks
- Privacy violations
- Not trusted
- Fails to be universal
- Unreliable when needed
- Misuse by
  - Terrorists & criminals
  - Promoters of racial hatred
  - Political oppressors



# Early Steps

## Informal Gathering College Park, MD, April 2009

### Article: Science March 2009

#### COMMENTARY

1431  
Dark lenses



1432  
Wood energy



LETTERS | BOOKS | POLICY FORUM | EDUCATION FORUM | PERSPECTIVES

#### LETTERS

BEN SHNEIDERMAN

#### A National Initiative for Social Participation

THE TRANSFORMATIVE POWER OF THE INTERNET IS MORE THAN ACCESS TO INFORMATION; it is increasingly about contributing, collaborating, and participating. Metaphors based on information highways are giving way to community visions that capture the remarkable enthusiasm for user-generated content and social media. At the same time, President Obama is calling for civic service and personal responsibility to rebuild America. Combining these ideas could promote the shift from playful, discretionary Internet usage to larger, more serious projects aligned with national priorities such as health care, community safety, education, and innovation.

The good news is that there are many promising social action networks, but these nascent explorations could be greatly accelerated by an organized research program. This program would systematically study the emerging phenomena, determine the sources of success or failure, and disseminate best practices. The payoffs are large enough to warrant an intense national effort akin to NASA's space program or the National Institutes of Health.

Health discussion groups have long been one of the Internet's success stories. Now, clever entrepreneurs are exploring new social participation ideas with projects such as the www.PatientsLikeMe.com Web site, where users offer their medical experiences in the hope of learning about treatment outcomes from one another. At the same time, these users are building a remarkable resource for medical research and discovery. Physicians have already discussed 30,000 cases at www.serono.com, where they can offer insights about innovative treatments as well as detect unusual disease patterns. Large corporations also recognize the opportunities and are inviting users to store their medical histories in the Microsoft HealthVault patient records.



menting on each other's work, arguing over quality criteria, and discussing what needs to be added. E. O. Wilson's dream of the Encyclopedia of Life, with a Web page for each of Earth's 1.8 million species, is on its way to becoming a citizen science success story that raises environmental awareness. Even YouTube, whose success was spiked by playful videos, is becoming the go-to educational resource and the place for students to post their term projects. These and many other initiatives are based on the collect-relate-create-donate mantra that suggests education happens when students start by collecting information, then move on to working in teams to create ambitious projects for the benefit of someone outside their classroom.

Innovation itself is getting turbocharged by going social. Open-source software projects are now taken seriously by big companies who claim greater reliability for programs that have been tested and read by millions of eyes. Open innovation is gaining similar credibility as corporate research directors who post their problems on www.Innocentive.com get hundreds of serious solutions from diverse creative types. Please see [www.iParticipate.org](http://www.iParticipate.org) for more information on funding and participating in these projects.

#### National Initiative for Social Participation

**Goal:** to promote dramatically increased research support and educational opportunities for technology-mediated social participation especially as related to national priorities.

Draft: May 29, 2009



##### Organized by:

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Jenny Preece, Univ of Maryland  
Ben Bederson, Univ of Maryland  
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Cynthia Parr, Smithsonian Institution  
Alex Pentland, MIT

<http://iParticipate.wikispaces.com>



# NSF Workshops: Academics, Industry, Gov't

## Technology Mediated Social Participation

U.S. National Science Foundation sponsored workshops



	About TMSP	Advisory Committee	West Coast Workshop	East Coast Workshop
Conferences and Publications				
Books				
Courses				
Research Groups				
International Efforts				
Bibliographic resources				
TMSP Google Group				

All around us, technology-mediated social participation has been harnessed for remarkable social benefits. New thrusts in basic research and engineering are likely to move beyond existing socio-technical media to produce new participatory systems spanning people, computation, communication and action. These developments could produce profound transformations in health care, community safety, disaster response, life-long learning, business innovation, energy sustainability, environmental protection, and other spheres of important national priorities.

### Workshop Information

The west-coast workshop will be held on December 10-11 2009, at the Palo Alto Research Center (PARC), Palo Alto, California.



COLLEGE OF  
INFORMATION  
STUDIES

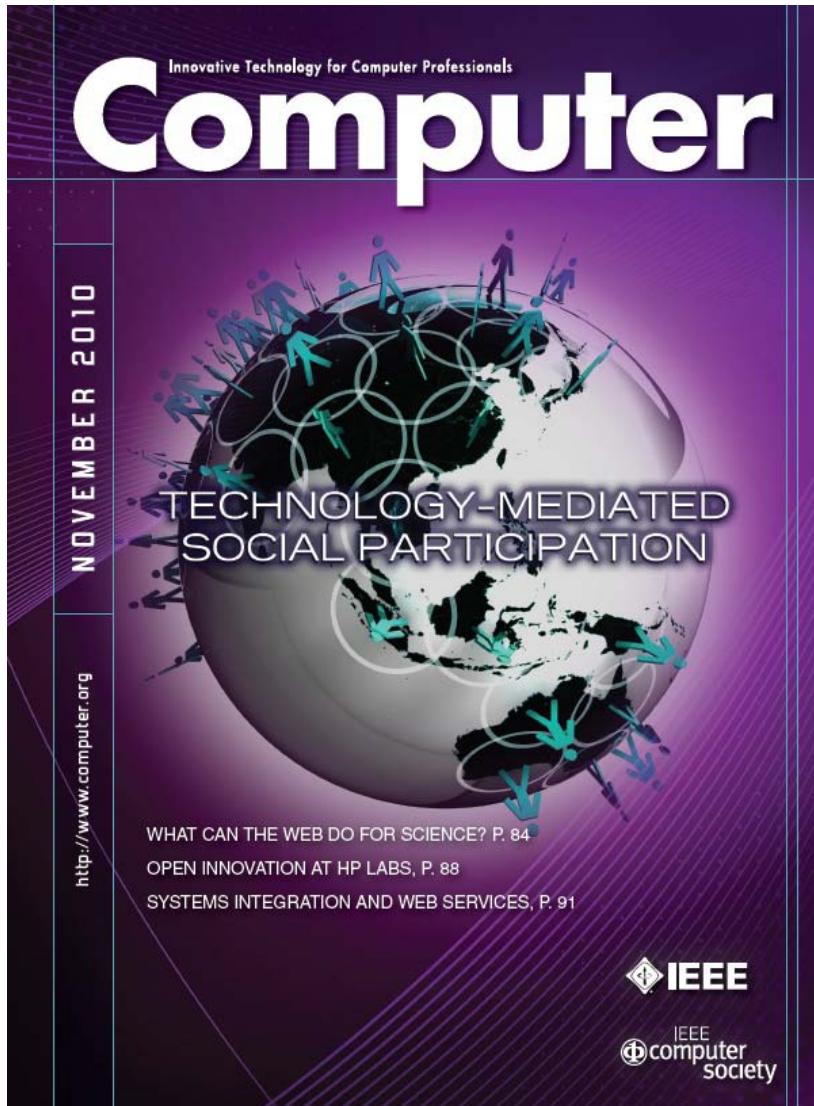


**parc**<sup>®</sup>  
Palo Alto Research Center

**Jenny Preece (PI), Peter Pirolli & Ben Shneiderman (Co-PIs)**  
[www.tmsp.umd.edu](http://www.tmsp.umd.edu)



# Cyberinfrastructure for Social Action on National Priorities



- Scientific Foundations
- Advancing Design of Social Participation Systems
- Visions of What is Possible With Sharable Socio-technical Infrastructure
- Participating in Health 2.0
- Educational Priorities for Technology Mediated Social Participation
- Engaging the Public in Open Government: Social Media Technology and Policy for Government Transparency



# Summer Social Webshop: August 23-26, 2011



Human-  
Computer  
Interaction Lab

UNIVERSITY OF MARYLAND

News + Events About HCIL People Research Publications Academics Sponsorship

SSW ::



ABOUT

Description

Topics

Organizers

Workshops

Speakers

Event Graph

PARTICIPANTS

Student Directory

Research

To-Do List

Pre-Event Survey

Exit Survey

PRESENTATIONS

GOOGLE GROUP

SCHEDULE

LOCATION

Map

Directions

Transportation

Accommodations

Airport\_Access

## Summer Social Webshop



The Summer Social Webshop ([@Webshop2011](#)) is a 4-day interdisciplinary workshop (August 23-26, 2011) at the University of Maryland, College Park organized by leading researchers for graduate students at US universities studying social-networking tools, blogs and microblogs, user-generated content sites, discussion groups, problem reporting, recommendation systems, and other social media.

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# International Efforts



Community Informatics  
Research Network



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[Manage Wiki](#)

Search

[Page stewards: Aldo de Moor, Larry Stillman](#)

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CHINESE ACADEMY OF SCIENCES

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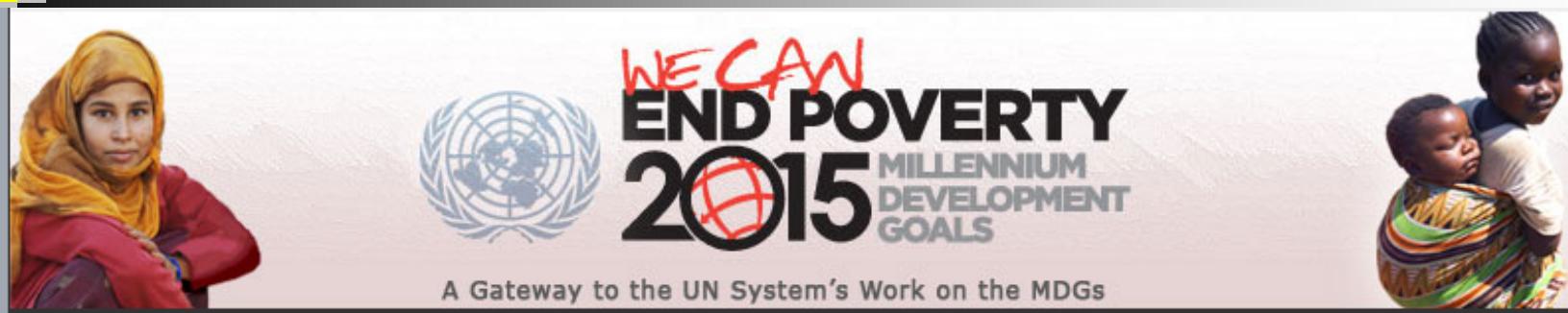
Administration

European Commission  
Joint Research Centre  
Institute for Prospective Technological Studies

EUROPA > European Commission > JRC > IPTS



# UN Millennium Development Goals



Background Reports Statistics Calendar Statements Media Room Youth Get Involved

Home
UN media contacts
UN Partners on MDGs
<b>UNDP</b> United Nations Development Programme
<b>Millennium Campaign</b>
<b>UNDESA</b> UN Department of Economic & Social Affairs
<b>World Bank</b>
<b>UNICEF</b> UN Children's Fund
<b>UNEP</b> UN Environment Programme
<b>UNFPA</b> UN Population Fund
<b>WHO</b> World Health Organization
<b>IMF</b> International Monetary Fund
<b>UN-HABITAT</b> UN Human Settlements Programme
<b>FAO</b>

## What's Going On?



**Every Woman Every Child- One year progress update**  
A one-year progress update "Saving the Lives of 16 Million", launched on 20 September 2011 at the UN, showed that in the first year of the effort, commitments have been implemented and enhanced, new partners have come on board and funding has been increased. While lauding this progress, Secretary-General Ban Ki-moon noted that millions of women and children are still dying and called for advancing the goal of saving 16 million lives by 2015.

## Governments Line up at UN in Support of International Push on Maternal, Child Malnutrition



One year after the launch of the Scale Up Nutrition (SUN) Movement, a global initiative that aims to improve maternal and child nutrition, representatives of governments, civil society and the private sector joined United Nations agencies to emphasize the importance of good nutrition, especially for mothers and infants during the 1,000 days between pregnancy and age 2. "The lives of millions of children are at stake. We can help them realize their physical and intellectual potential" Mr. Ban told the meeting

MILLENNIUM DEVELOPMENT GOALS	
	End Poverty and Hunger
	Universal Education
	Gender Equality
	Child Health
	Maternal Health
	Combat HIV/AIDS
	Environmental Sustainability
	Global Partnership



# Vision: Social Participation

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## 1) National Priorities

- Disaster response, community safety
- Health, energy, education, e-government
- Environmental awareness, biodiversity

## 2) Deep Science

- How do social media networks evolve?
- How can participation be increased?

## 3) Extreme Technology

- Scalable, reliable, universal, manageable
- Protect privacy, stop attacks, resolve conflicts



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# 911.gov: Internet & mobile devices

- Residents report information
- Professionals disseminate instructions
- Resident-to-Resident assistance

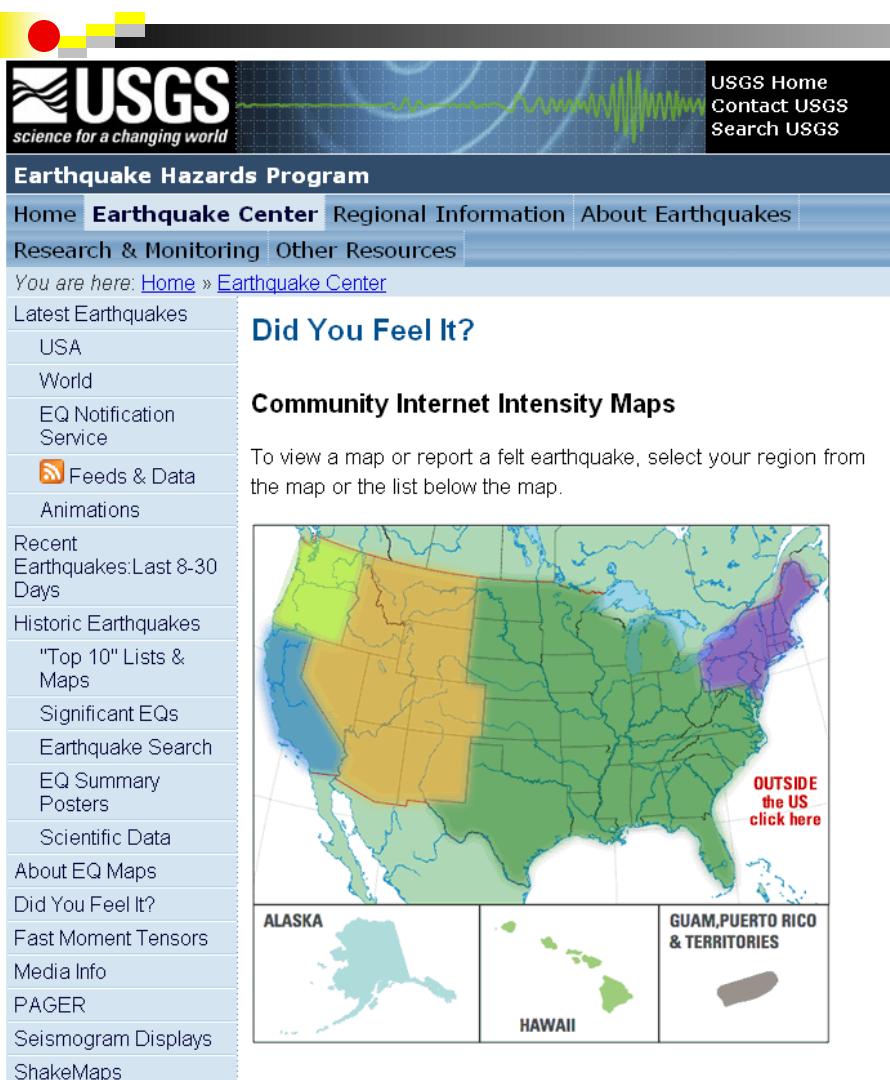


Professionals in control  
while working with  
empowered residents

Shneiderman & Preece, *Science* (Feb. 16, 2007)  
[www.cs.umd.edu/hcil/911gov](http://www.cs.umd.edu/hcil/911gov)



# Reporting: Earthquakes & Storms



The screenshot shows the USGS Earthquake Hazards Program website. At the top is the USGS logo with the tagline "science for a changing world". Below it is a seismograph graphic. The main navigation menu includes "USGS Home", "Contact USGS", and "Search USGS". Below the menu, the "Earthquake Hazards Program" is highlighted. The navigation bar includes "Home", "Earthquake Center", "Regional Information", "About Earthquakes", "Research & Monitoring", and "Other Resources". A breadcrumb trail shows "You are here: Home » Earthquake Center". A sidebar on the left lists "Latest Earthquakes" (USA, World, EQ Notification Service, Feeds & Data, Animations), "Recent Earthquakes: Last 8-30 Days", "Historic Earthquakes" (Top 10 Lists & Maps, Significant EQs, Earthquake Search, EQ Summary Posters, Scientific Data), "About EQ Maps", "Did You Feel It?", "Fast Moment Tensors", "Media Info", "PAGER", "Seismogram Displays", and "ShakeMaps". The main content area features a section titled "Did You Feel It?" and "Community Internet Intensity Maps". It includes a map of the United States with color-coded intensity levels, and links for "OUTSIDE the US click here", "ALASKA", "HAWAII", and "GUAM, PUERTO RICO & TERRITORIES".

[earthquake.usgs.gov/eqcenter/dyfi](http://earthquake.usgs.gov/eqcenter/dyfi)



The screenshot shows the 3kimt.com website. At the top is the 3kimt.com logo with the tagline "Iowa, Minnesota, together.". Below it is a search bar. The main navigation menu includes "Home", "News", "Weather", "Sports", "Health", "Links Mentioned", "Big Shot", "Features", "Programming", "Community Calendar", and "Local Expert". A sidebar on the left features a "Hearing Associates, P.C." advertisement with a photo of four professionals and contact information. The main content area features a "Local weather" section with the "STORM TEAM 3" logo and "StormTeam 3 Storm Spotter Weather Reports". It includes a statement about the variability of rainfall and snowfall, and a red text message encouraging users to register for a username and password. Below this are fields for "Username" and "Password". Further down are fields for "Precipitation recorded:" and "Location precipitation was recorded at:" with a dropdown menu. The right side of the page features a "Forecast Center" with current weather information (Partly Cloudy, Hi 51, Low 35), a "Local Forecast" section, and a "Video on demand" section showing a preview of the "Storm Team 3 Forecast".

[weather.kimt.com](http://weather.kimt.com)



# Reporting: Community Safety

**Watch Jefferson County**  
Online Neighborhood Watch in Jefferson County, WV

**File a Report** **Discussion** **Resources** **Contact** **About**

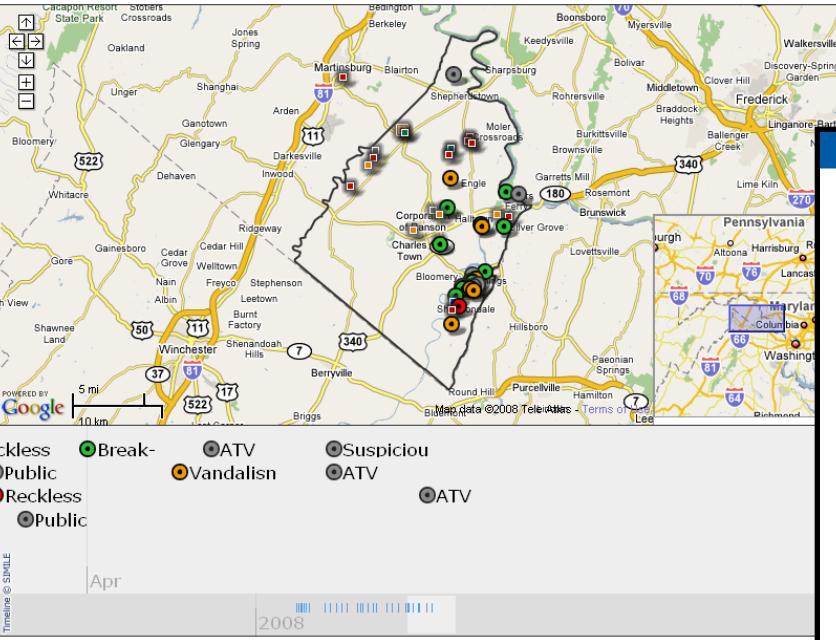
Police Logs - All Offenses  Within 5 miles of  Save as [Please log in or register to save searches](#)

01 Nov 200  Any Zip Code [\[ Show Saved Searches \]](#)  Update map

31 May 200

[Show / Hide Additional Search Options](#)

Showing 1-50 of 4015. [ 3783 incidents, 232 reports ] [Next >>](#)



**REPORT: ATV Complaint**  
ATV Complaint  
Saturday Apr 12 2008 4:45pm  
2 Dirt Bikes - Noisey - No Helmets - Public Rds

**Nation of Neighbors** [Blog](#) [Communities](#) [Forum](#) [About](#) [Contact Us](#)



[File a Neighborhood Watch Report](#)

[Sign Up](#) [Sign In](#)

Begin sharing information with your community in minutes - for free. Ready to get started?

[Sign up now!](#)



Click to view sample pages

**What People Are Saying**

[watchjeffersoncounty.net](http://watchjeffersoncounty.net)  
→ [nationofneighbors.net](http://nationofneighbors.net)

## Nation of Neighbors

Online Neighborhood Watch and Reporting

Free tools for citizens, community groups, local government and law enforcement professionals. [Learn More...](#)

### Neighborhood Watch Signs



Buy your signs from us and help fund Nation of Neighbors! High quality HIP road signs 3 sizes. The only sign that comes with a free real-time alert system for your community!

### Latest News

#### Please Participate in Our Survey

Friday, December 10, 2010

You are invited to participate in a short survey about your use of Nations of Neighbors.

<http://www.nationofneighbors.com/survey>

#### Nation of Neighbors Partners with University of Maryland

Wednesday, September 29, 2010

We are pleased to announce that the University of Maryland has received a grant from the National Science Foundation to support Nation of Neighbors.

### Video Tutorials

[Add your community](#)  
[Adding content](#)

### Stay Informed



Why can't I join my own

[Welcome Letter](#)  
[Fact Sheet](#)

# Disaster Response: Wildfires



Home The Tour Sign Up Explore

## Yahoo! News California Wildfires

Discussion Pool Map 64 Members



From ms4jah



From cpm73



From cpm73



From cpm73



From cpm73



From bigmikelakers



From cpm73



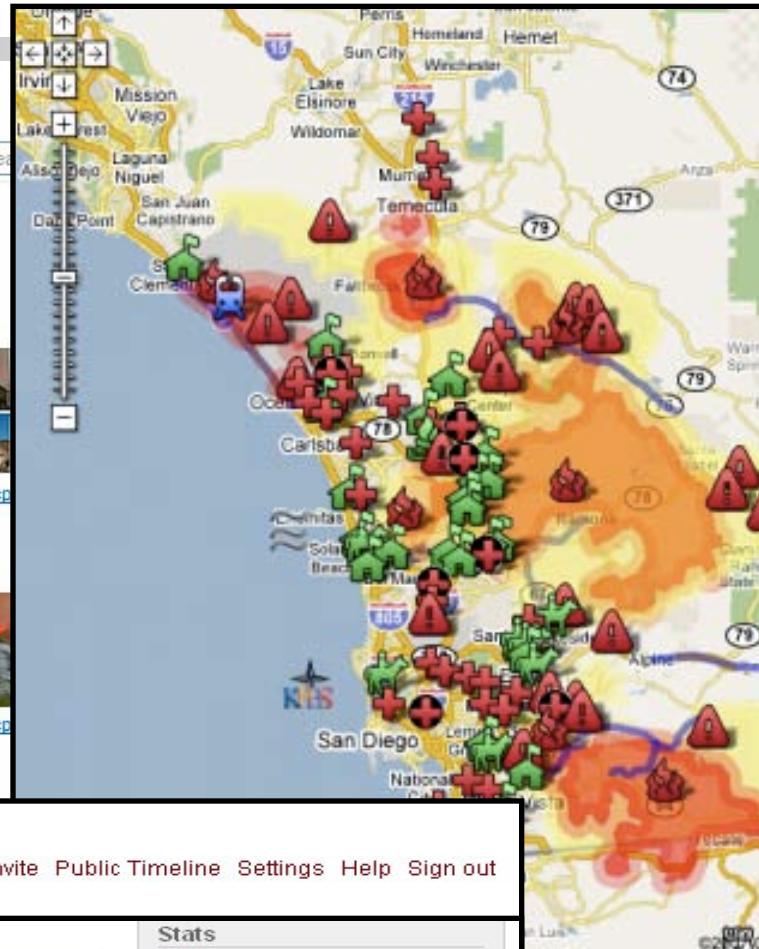
From cpm73



From cpm73



From cpm73



Home Find & Invite Public Timeline Settings Help Sign out

With Others

Previous

#sandiegofire Harris fire now 50 percent contained 08:21 AM October 27, 2007 from web

#sandiegofire Witch Creek fire now 60 percent contained 08:21 AM October 27, 2007 from web

#sandiegofire Rice Canyon fire now 80 percent contained 08:21 AM October 27, 2007 from web

@pinguino that's really cool. Thanks! 08:20 AM October 27, 2007 from web

#sandiegofire All Del Dinos residents may return to their homes, county officials

### Stats

Following	58
Followers	317
Favorites	17
Updates	1,650

### Following



# Community Safety: Abducted Children



Home About Us Supporters Training Site Search News & Events

## Help Now

Report a Sighting  
CyberTipline  
Get Involved  
AMBER Alert  
Donate  
Stay Informed  
Resources for

Parents & Guardians  
Law Enforcement  
Childcare Providers  
Attorneys  
Media

## Topics of Focus

If Your Child Is Missing  
Sexual Exploitation  
Child Safety  
Sex Offenders  
Success Stories  
Natural Disasters

## Global Network

Learn More

## Language

English

## Special Thanks



[www.ncmec.org](http://www.ncmec.org)

[www.missingkids.com](http://www.missingkids.com)

**ALERT!** Have you seen these children?



FLOR ESCOBAR  
Missing since:  
Mar 3, 2008  
WEST VALLEY CITY UT



JEFFREY S.  
Missing s.  
Mar 24, 2008  
ATTALLA

## Quick Search

Female  Male

Select a State (USA)

Missing within

[More search options](#)



Join the fight against  
child abduction and sexual exploitation.

National Missing Children  
May 25, 2008

## Featured Services

NetSmartz  
An Internet, safety-education resource for  
children (5-17), parents, guardians, educators,  
and law enforcement

CyberTipline  
Report incidences of child sexual exploitation  
NetSmartz411

## Latest News

National Children  
Missing Children  
Law Enforcement  
for Work Involved  
Exploited Children

[More News](#)

## About AMBER Alert

- Guidelines
- Coordinator
- Legislation
- National Strategy

## Statistics

## Resources

- State AMBER Alert Contacts
- Wireless AMBER Alerts
- Toolkit for Raising Awareness
- Training

## Newsroom

- Press Releases
- Publications
- Videos
- Messages
- Events
- Speeches

# U.S. Department of Justice Office of Justice Programs

Innovation \* Partnerships \* Safer Neighborhoods



## AMBER Alert

*America's Missing: Broadcast Emergency Response*

[Home](#) | [FAQs](#) | [Site Index](#) | [Contact Us](#) | [Search](#)

Go

## Related Initiatives



[See Active AMBER Alerts](#)



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[www.amberalert.gov](http://www.amberalert.gov)



# Health/Wellness

The image is a composite of three screenshots from different health-related platforms. The top section shows the patientslikeme® website with a blue header, a user profile for 'mompeach', and a grid of patient profiles. The middle section shows the Microsoft HealthVault website with a large 'Welcome' banner and a 'Create a free HealthVault account' button. The bottom section shows a mobile device screen with a 'HealthVault' app interface.

**patientslikeme®**

mompeach shared a Quality of Life survey

116,485 patients  
500+ conditions

Who's like you?

Share your experience.  
The more you share, the easier it will be to find patients like you. Start by adding a condition, symptom or treatment.

I have

Type at least 3 letters of a condition

Username or Email  Login

Remember me | Forgot password? | Secure login

Get your health in order.  
Join PatientsLikeMe.

Search this site

Find Patients Like You

Explore our Treatment Reports

Learn about Symptoms

Learn about HealthVault ▾ Learn about Devices Web Applications

Welcome to Microsoft HealthVault

Take charge of your family's health and make more informed health decisions for yourself and your loved ones. [Learn more](#)

HealthVault lets you ...

- **Organize** your health information, with everything in one place
- **Simplify** your life: enter health info once, use it in many ways
- **Gain insight** with data that helps you make informed decisions

Create a free HealthVault account

Already have an account? [Sign in](#).

# Doctor-to-Doctor Networks

The image is a screenshot of the Sermo website. At the top, there is a navigation bar with the Sermo logo on the left and 'Join Now' and 'Already a Member, Sign in' buttons on the right. Below the logo is a horizontal menu bar with buttons for 'Home', 'Benefits', 'How It Works', 'Blog', 'News', and 'About Us'. The main content area is divided into five sections: 'Reform', 'Lead', 'Earn', 'Research', and 'Connect'. Each section has a sub-section with a title, a snippet of text, and a screenshot of a specific feature or post. For example, the 'Lead' section shows a 'Berne Case Conference in Pathology: Hypotonic Newborn' post. The 'Research' section includes a chart titled 'How long would you wait for surgery?' with the following data:

Response	Number of respondents
more than 1 year	20 (22)
less than 1 year	16 (18)
less than 1 month	10 (11)
less than 1 week	5 (5)
less than 1 day	2 (2)
not applicable	1 (1)



# Register now to join the doc2doc community

connecting doctors worldwide

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Need help? [FAQs](#) 

# Energy Sustainability



U.S. ENVIRONMENTAL PROTECTION AGENCY • U.S. DEPARTMENT OF ENERGY

ENERGY STAR

## PRODUCTS ▾

Change the world, take the ENERGY STAR Pledge.



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Appliances  
Heating & Cooling  
Home Electronics  
Lighting  
Office Equipment  
Store Locator  
Rebate Finder

## HOME IMPROVEMENT ▾



Explore Home Improvement >  
Common Home Problems  
Home Energy Audits  
Air Seal & Insulate  
Heat & Cool Efficiently  
Home Performance with ENERGY STAR  
For Contractors

## BUILDINGS & PLANTS ▾



Explore Buildings & Plants >  
Guidelines for Energy Management  
Tools & Resources Library  
Expert Help  
Commercial Building Design  
Green Buildings

## NEW HOMES ▾



Explore Qualified New Homes >  
Find an ENERGY STAR Builder  
ENERGY STAR New Home Features  
Benefits for Homeowners  
For Residential Professionals



Tax Credits for Energy Efficiency



Cool Your World with ENERGY STAR @home



ENERGY STAR Podcast



ENERGY STAR in Affordable Housing



EPA Home

DOE Home  
DOE Search

Products • Home Improvement • New Homes • Buildings & Plants • Partner Resources • Publications • News Room • FAQs • Contact Us • Privacy • Site Index • Recursos en Español

[Energystar.gov](http://Energystar.gov)

Microsoft®  
**hohm™ beta**

Learn how you can reduce your home energy usage and start saving today

**Where do I spend?**  
Find out where your energy is going and how you compare to others.

**How can I save?**

[microsoft-hohm.com](http://microsoft-hohm.com)



# Biodiversity: Encyclopedia of Life

HOME PREFERENCES LANGUAGE: EN FEEDBACK PRESS ROOM USING THE SITE ABOUT EOL

"Imagine an electronic page for each species of organism on Earth..." - Edward O. Wilson  
[login](#) | [create an account](#)

SHOWING AUTHORITATIVE INFORMATION  
 Names  Tags  Full-text

Explore

  
*Typha angustifolia* L.  
Narrowleaf cattail

  
*Pseudomyrmex denticolli* (Emery, 1890)

  
*Deilephila porcellus* Linnaeus 1758  
Small elephant hawkmoth

  
*Hypnos monopterygius* (Shaw, 1795)  
Australian numbfish

  
*Hydrometra stagnorum* (Linnaeus, 1758)

HOME PREFERENCES LANGUAGE: EN FEEDBACK

[login](#) | [create an account](#)

Names

## *Sargocentron seychellense* (Smith)

Yellow-tipped squirrelfish

Species recognized by [FishBase](#), R Froese & D Pauly (eds) in [Catalogue of Life](#)  
IUCN RED LIST STATUS: NOT EVALUATED

IMAGES MAPS COMMENTS



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SUPPLIER: [Fi](#)  
SOURCE: [John](#)  
BPBM 21576

What's New

- 08/27/2009 - [A](#) nature
- 08/13/2009 - [L](#) [attenboroughi](#), insects.
- 08/10/2009 - [Y](#) and automatica web page. An A
- 08/05/2009 - [T](#) vulnerable and [extinction](#) acco
- 08/03/2009 - [C](#) Winners!
- [more news...](#)

PHYSICAL DESCRIPTION

Max. size

eol.org

# Serve.gov: Voluntary service

SERVE.GOV

Provided by *The Corporation for National and Community Service*

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Get Email Updates | Already Registered a Project? Log In



'69 Mets celebrate their World Championship 40th Anniversary by supporting their community.

Privacy info

0:00 / 4:04



Additional Videos | Subscribe

## '69 New York Mets Champion Affordable Housing with "Miracle Build"

On August 22, 2009, Citi joined Habitat for Humanity and members of the 1969 World Champion New York Mets team for the "Miracle Build." Working with United We Serve, the project helped create affordable housing in New York.

## United We Serve

The President is calling on all Americans to participate in our nation's recovery and renewal by serving in our communities. There are many ways to get involved. America's new foundation will be built one community at a time – and it starts with you.

### Find a Volunteer Opportunity

What interests you?

Keywords

Example: hunger, veterans, mentoring, sports

Where would you like to volunteer?

Location

(City, State, or ZIP Code)

Find Opportunities Now

POWERED BY  
All for Good

Register Your Project & Recruit Volunteers  
Find a Volunteer Opportunity  
Read Inspiring Stories of Service & Share Your Own Story



# Open Data.gov + Recovery.gov

DATA.GOV

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HOME | CATALOGS | STATE/LOCAL | FAQ | SUGGEST DATASETS | AGENCIES | ABOUT | BLOG |

**DISCOVER.**  
**PARTICIPATE.**  
**ENGAGE.**

Search the following Data.gov catalogs:

["RAW" DATA CATALOG](#) [TOOL CATALOG](#) [GEODATA CATALOG](#)

**FEATURED TOOLS: NATIONAL ASSETS**

A vital part of promoting innovation and entrepreneurship is creating partnerships between federal labs and entrepreneurs. Providing information from the federal laboratories about opportunities for partnerships is critical if these partnerships are to become reality. To facilitate these efforts, the NIH, FDA, ARS/DoA, DOE, and NIST have provided electronic feeds for technologies available for commercial licensing and collaborations; more federal labs are expected to join this effort soon.



TUESDAY, DECEMBER 08, 2009

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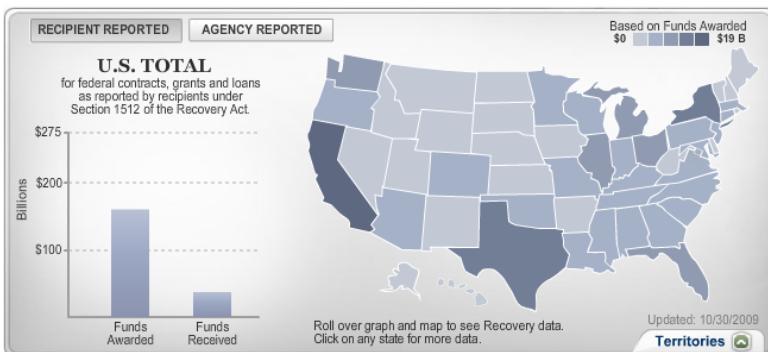
Recovery.gov is the U.S. government's official website providing easy access to data related to Recovery Act spending and allows for the reporting of potential fraud, waste, and abuse.

All of Recovery.gov

Search

Go

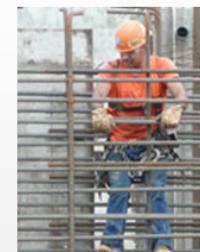
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## CLEAN WATER PROJECT FOR THREE STATES TO CREATE OR SAVE 600 JOBS

A Recovery project expected to create or save 600 jobs will provide 300,000 residents with a new water treatment plant. Source: Lewis & Clark Regional Water System

Find out more about Clean Water Project for Three States to Create



# Vision: Social Participation

## 1) National Priorities

- Disaster response, community safety
- Health, energy, education, e-government
- Environmental awareness, biodiversity

## 2) Deep Science

- How do social media networks evolve?
- How can participation be increased?

## 3) Extreme Technology

- Scalable, reliable, universal, manageable
- Protect privacy, stop attacks, resolve conflicts



# Network Theories: Evolution models

- Random, preferential attachment,...
- Monotonic, bursty,...
- Power law for degree (hubs & indexes)
- Small-world property
- Forest fire, spreading activation,...
- Matures, decays, fragments, ...

Watts & Strogatz, *Nature* 1998; Barabasi, *Science* 1999, 2009;

Newman, *Phys. Rev. Letters* 2002

Kumar, Novak & Tomkins, *KDD*2006

Leskovec, Faloutsos & Kleinberg, *TKDD*2007



# Network Theories: Social science

---

- Relationships & roles
- Strong & weak ties
- Motivations: egoism, altruism, collectivism, principlism
- Collective intelligence
- Collective action & governance
- Social information foraging

Moreno, 1938; Granovetter, 1971; Burt, 1987; Ostrom, 1992;  
Wellman, 1993; Batson, Ahmad & Tseng, 2002;  
Malone, Laubaucher & Dellarocas, 2009; Pirolli, 2009



# Network Theories: Stages of participation

---

## Wikipedia, Discussion & Reporting

- Reader
- First-time Contributor  
(Legitimate Peripheral Participation)
- Returning Contributor
- Frequent Contributor

Preece, Nonnecke & Andrews, *CHB2004*

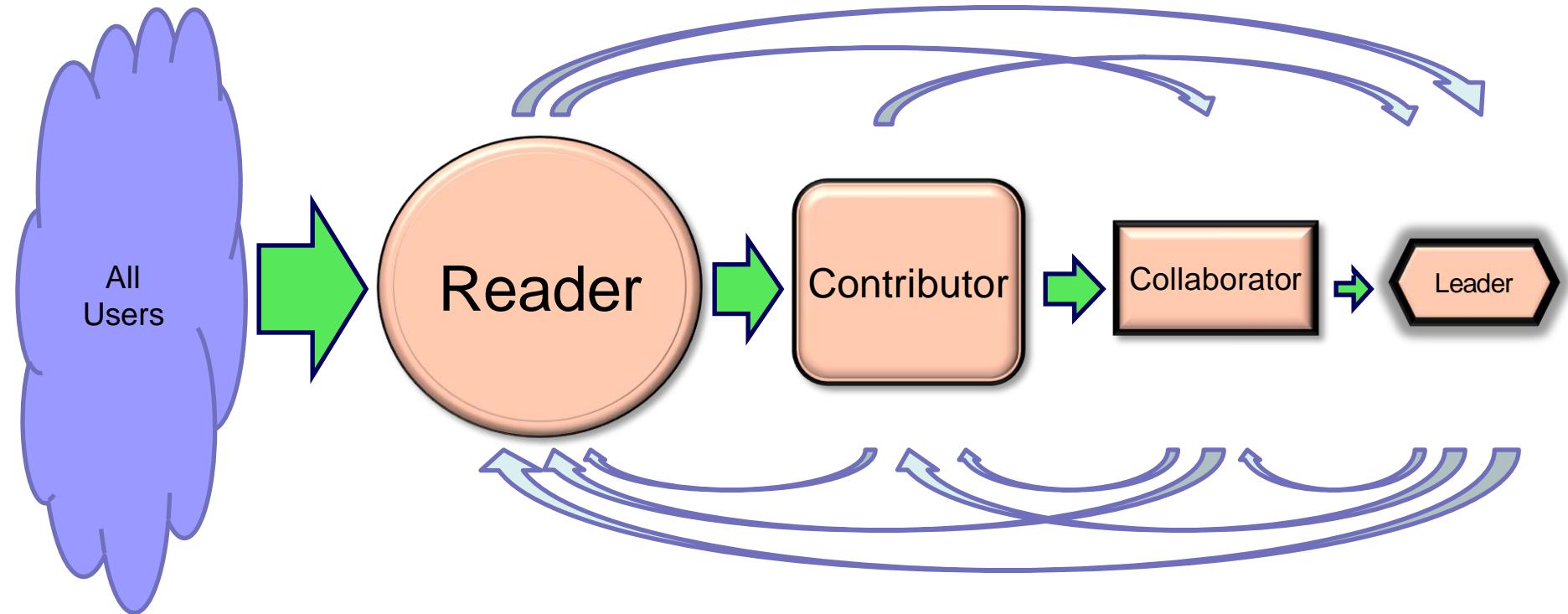
Forte & Bruckman, *SIGGROUP2005*; Hanson, 2008

Porter: *Designing for the Social Web*, 2008

Vassileva, 2002, 2005; Ling et al., *JCMC 2005*; Rashid et al., *CHI2006*



# From Reader to Leader: Motivating Technology-Mediated Social Participation



Preece & Schneiderman, *AIS Trans. Human-Computer Interaction* 1 (1), 2009  
[aisel.aisnet.org/thci/vol1/iss1/5/](http://aisel.aisnet.org/thci/vol1/iss1/5/)



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# Technology Infrastructure

---

- Mobile, Desktop, Web, Cloud
- 100% uptime, 100% secure
- Giga-collabs, Tera-contribs
- Universal accessibility & usability
- Trust, empathy, responsibility, privacy
- Leaders can manage usage
- Designers can continuously improve



# NodeXL:

## Network Overview for Discovery & Exploration in Excel

Senate\_RawTutorial - Microsoft Excel non-commercial ...

Table Tools

Home Insert Page Layout Formulas Data Review View NodeXL Design

Graph Type: Undirected Import Help Merge Duplicate Edges

Show/Hide Graph Pane Export Copy Vertex Names

AutoFill Columns Convert Old Workbook Vertices Calculate Graph Metrics

Graph Edges Vertices Analysis Create Clusters

Security Warning Automatic update of links has been disabled Options...

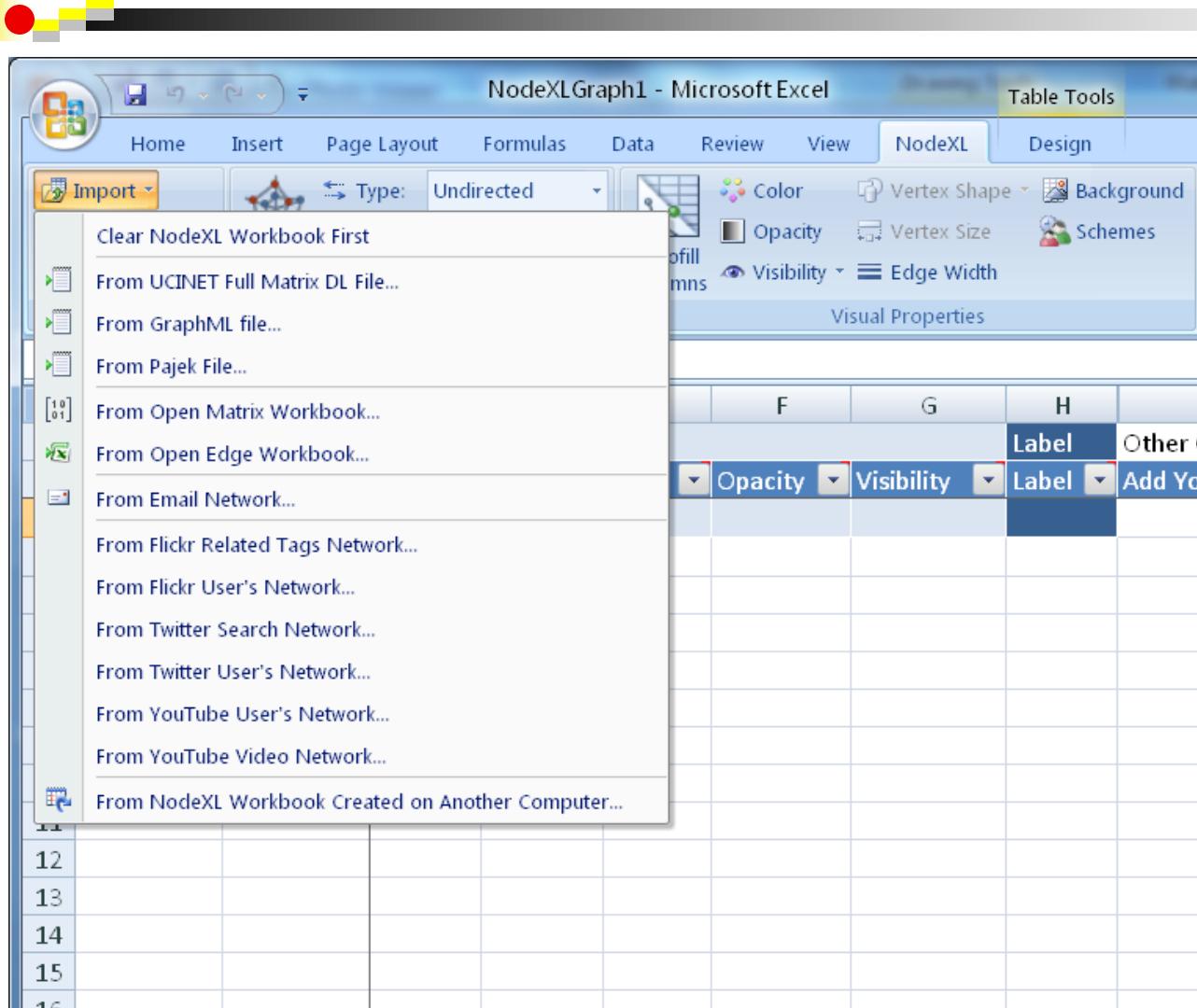
Add Your Own Columns Here

	A	B	C	D	E	F	G
1	Vertex 1	Vertex 2	Color	Width	Opacity	Visibility	ID
2	Akaka	Alexander	Light Gray		1.7	0	2
3	Akaka	Allard	Light Gray		1.0	0	3
4	Akaka	Baucus	Light Gray		9.9	1	4
5	Akaka	Bayh	Light Gray		9.7	1	5
6	Akaka	Bennett	Light Gray		2.0	0	6
7	Akaka	Biden	Light Gray		10.0	1	7
8	Akaka	Bingaman	Light Gray		10.0	1	8
9	Akaka	Bond	Light Gray		1.6	0	9
10	Akaka	Boxer	Light Gray		10.0	1	10
11	Akaka	Brown	Light Gray		10.0	1	11
12	Akaka	Brownback	Light Gray		1.0	0	12
13	Akaka	Bunning	Light Gray		1.0	0	13
14	Akaka	Burr	Light Gray		1.0	0	14
15	Akaka	Byrd	Light Gray		10.0	1	15
16	Akaka	Cantwell	Light Gray		10.0	1	16
17	Akaka	Cardin	Light Gray		10.0	1	17
18	Akaka	Carper	Light Gray		10.0	1	18
19	Akaka	Casey	Light Gray		10.0	1	19
20	Akaka	Chambliss	Light Gray		1.0	0	20
21	Akaka	Clinton	Light Gray		10.0	1	21
22	Akaka	Coburn	Light Gray		1.0	0	22
23	Akaka	Cochran	Light Gray		1.7	0	23

Document Actions

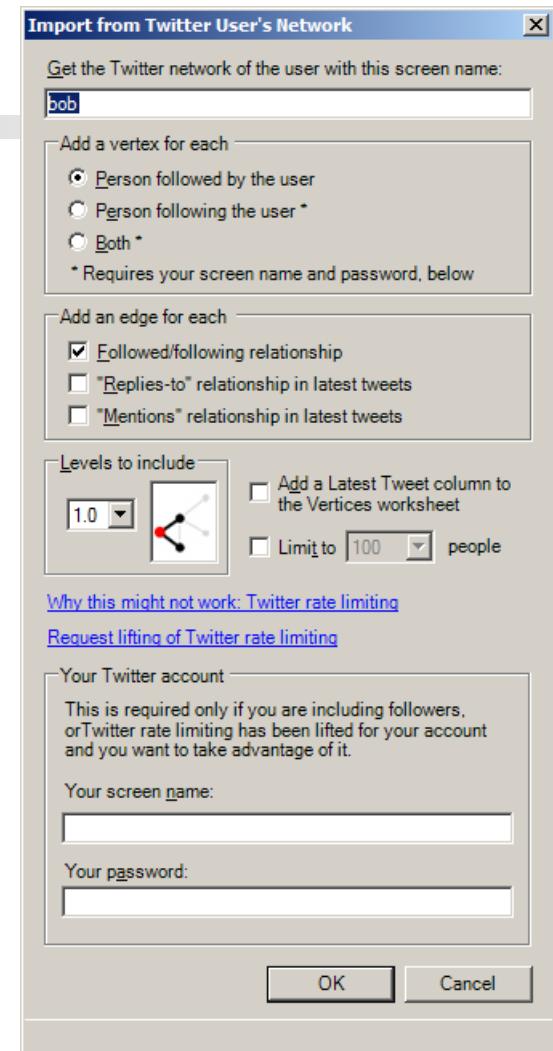
Read Workbook Lay Out Again Layout Type Dynamic Filters

# NodeXL: Import Dialogs

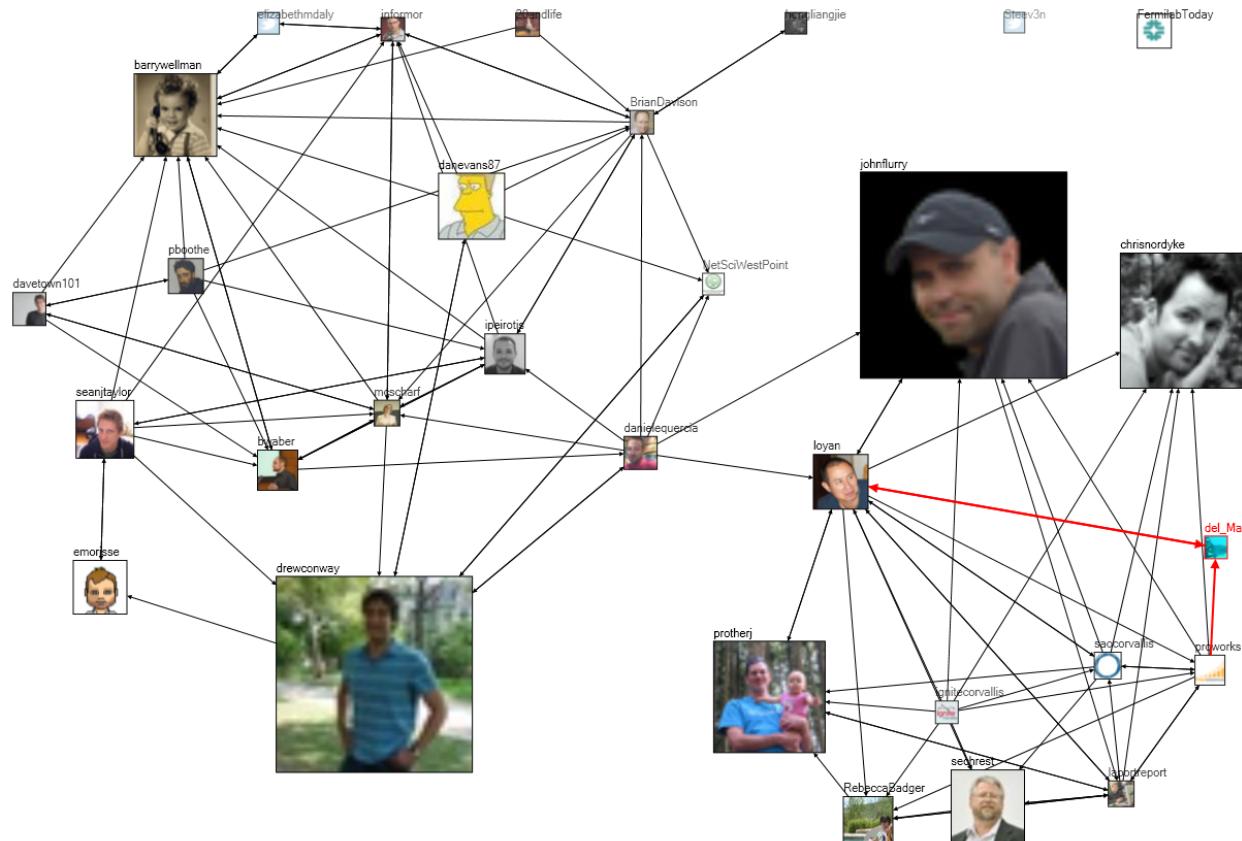


The screenshot shows a Microsoft Excel window titled "NodeXLGraph1 - Microsoft Excel". The ribbon is visible with the "NodeXL" tab selected. A dropdown menu is open under the "Import" button in the ribbon, listing various network import options. The options include:

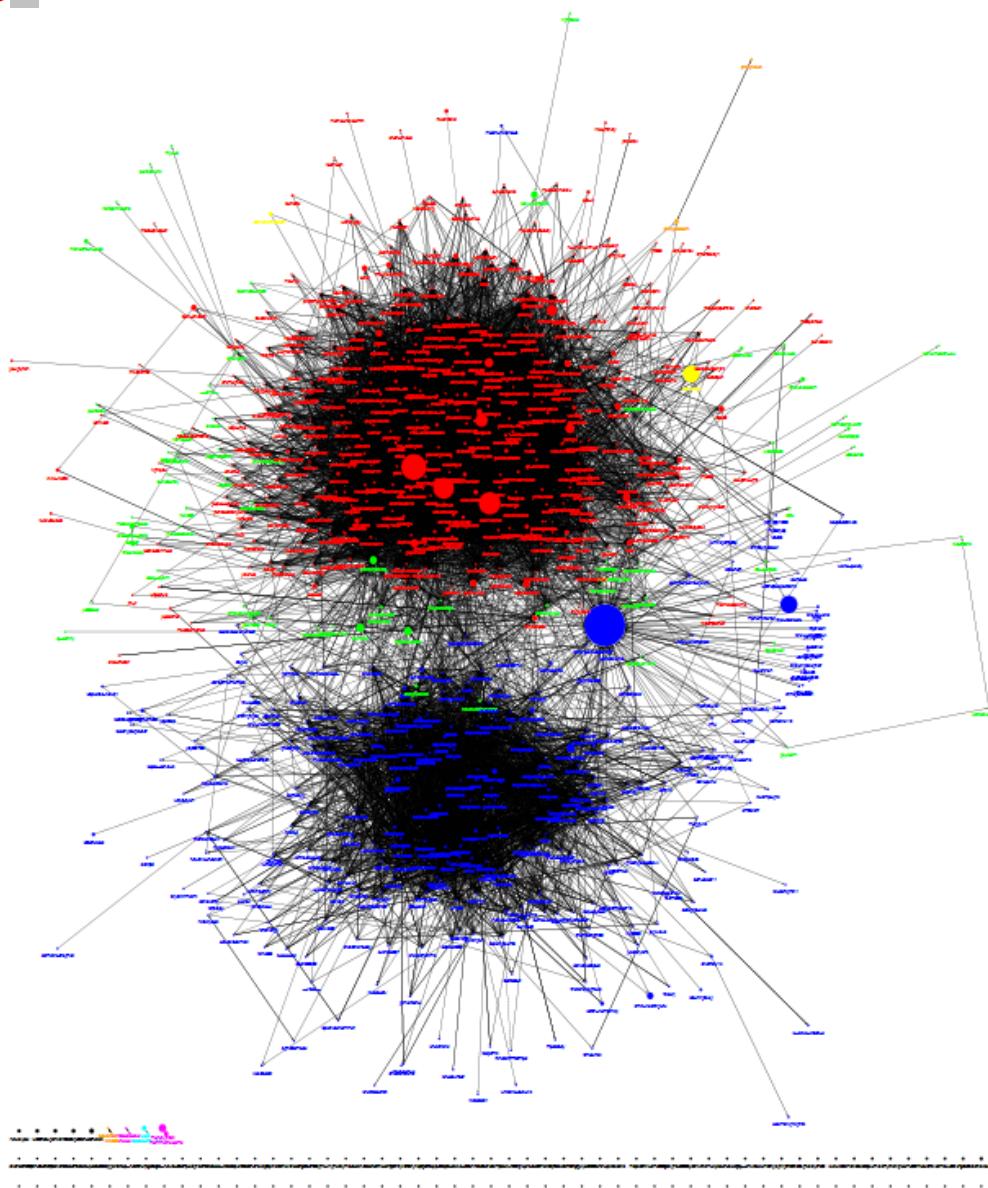
- Clear NodeXL Workbook First
- From UCINET Full Matrix DL File...
- From GraphML file...
- From Pajek File...
- From Open Matrix Workbook...
- From Open Edge Workbook...
- From Email Network...
- From Flickr Related Tags Network...
- From Flickr User's Network...
- From Twitter Search Network...
- From Twitter User's Network...
- From YouTube User's Network...
- From YouTube Video Network...
- From NodeXL Workbook Created on Another Computer...



# Tweets at #WIN09 Conference: 2 groups



# Twitter discussion of #GOP



**Red: Republicans, anti-Obama, mention Fox**

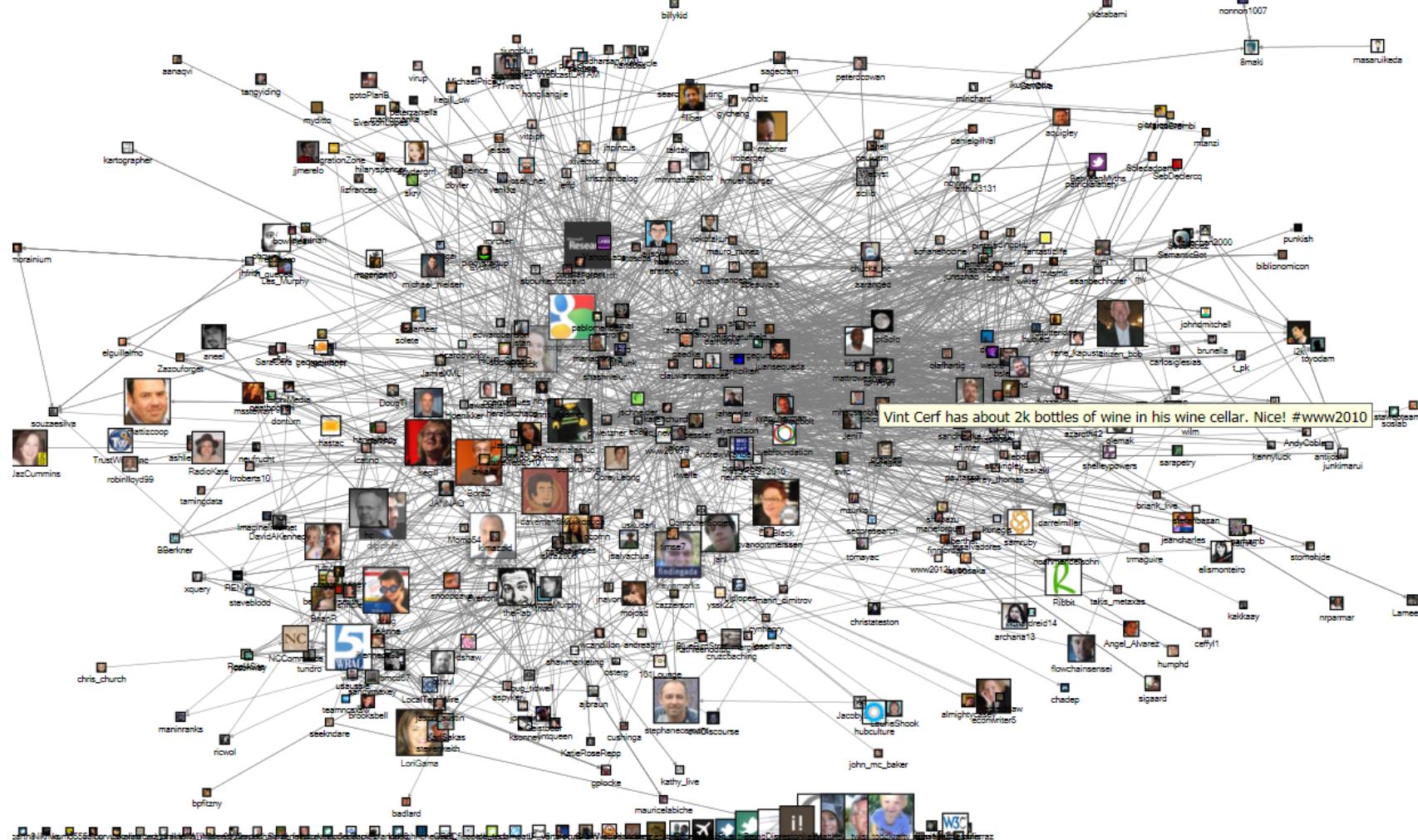
**Blue: Democrats, pro-Obama, mention CNN**

**Green: non-affiliated**

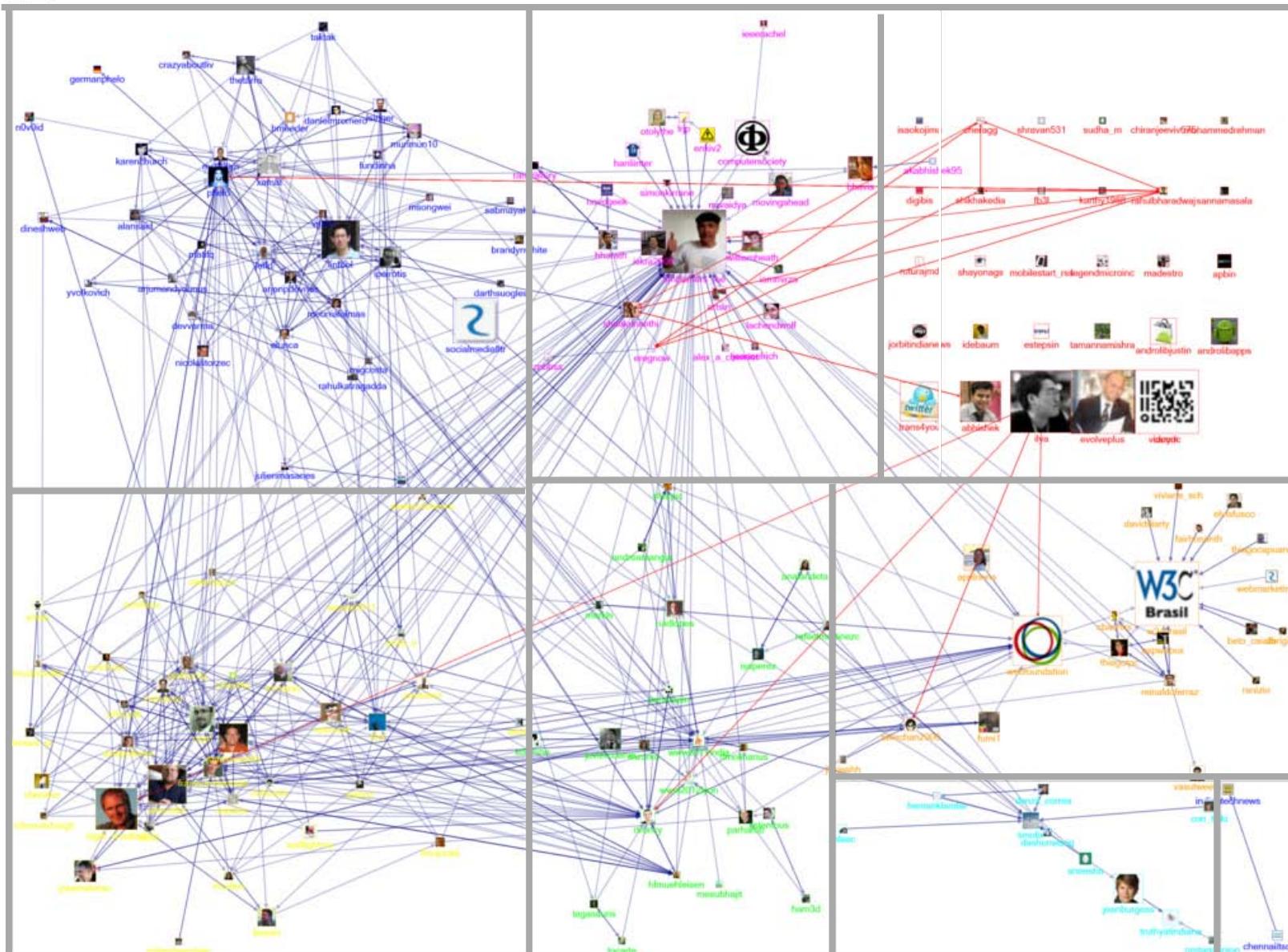
Node size is number of followers  
Politico is major bridging group

1	Graph Metrics						
	2	Vertex	Subgraph	In-Degree	Out-Degree	Betweenness Centrality	Closeness Centrality
3	politico			133	2	63463.406	0.0
4	scottwgraves			153	50	45379.121	0.0
5	c0nservative1			146	93	34064.604	0.0
6	arizona_freedom			150	102	28549.034	0.0
7	conservative432			135	74	20294.618	0.0
8	kosmosnet			111	5	15681.759	0.0
9	katyinindy			138	24	12879.665	0.0

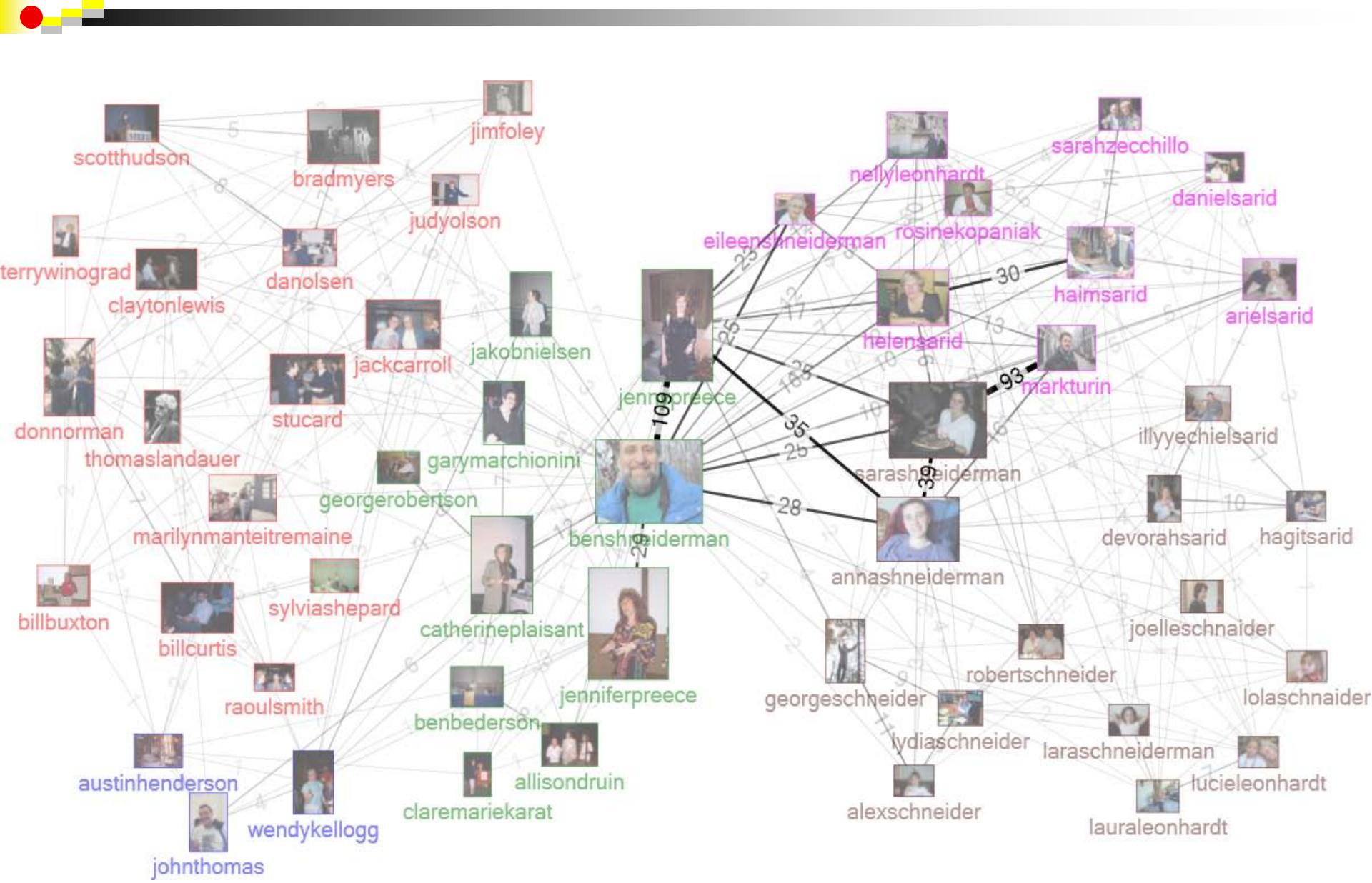
# WWW2010 Twitter Community



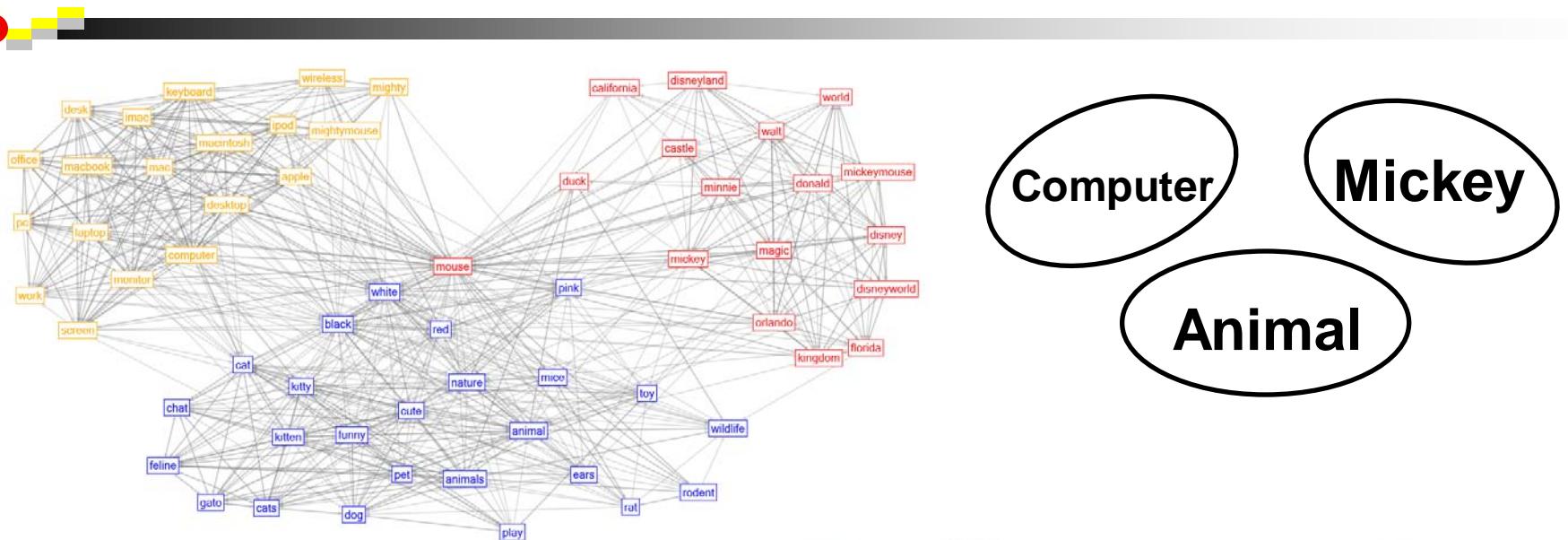
# WWW2011 Twitter Community: Grouped



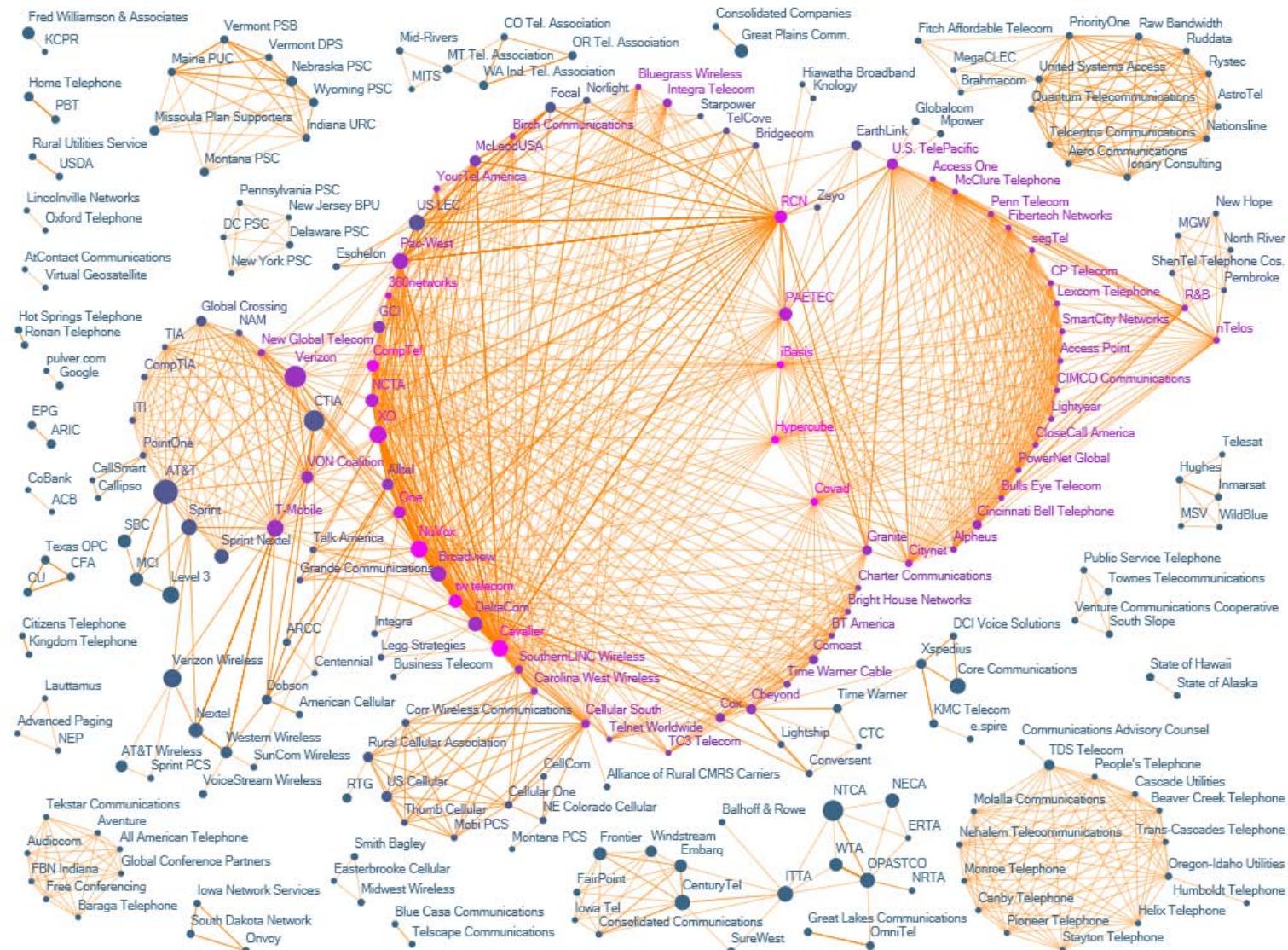
# Flickr networks

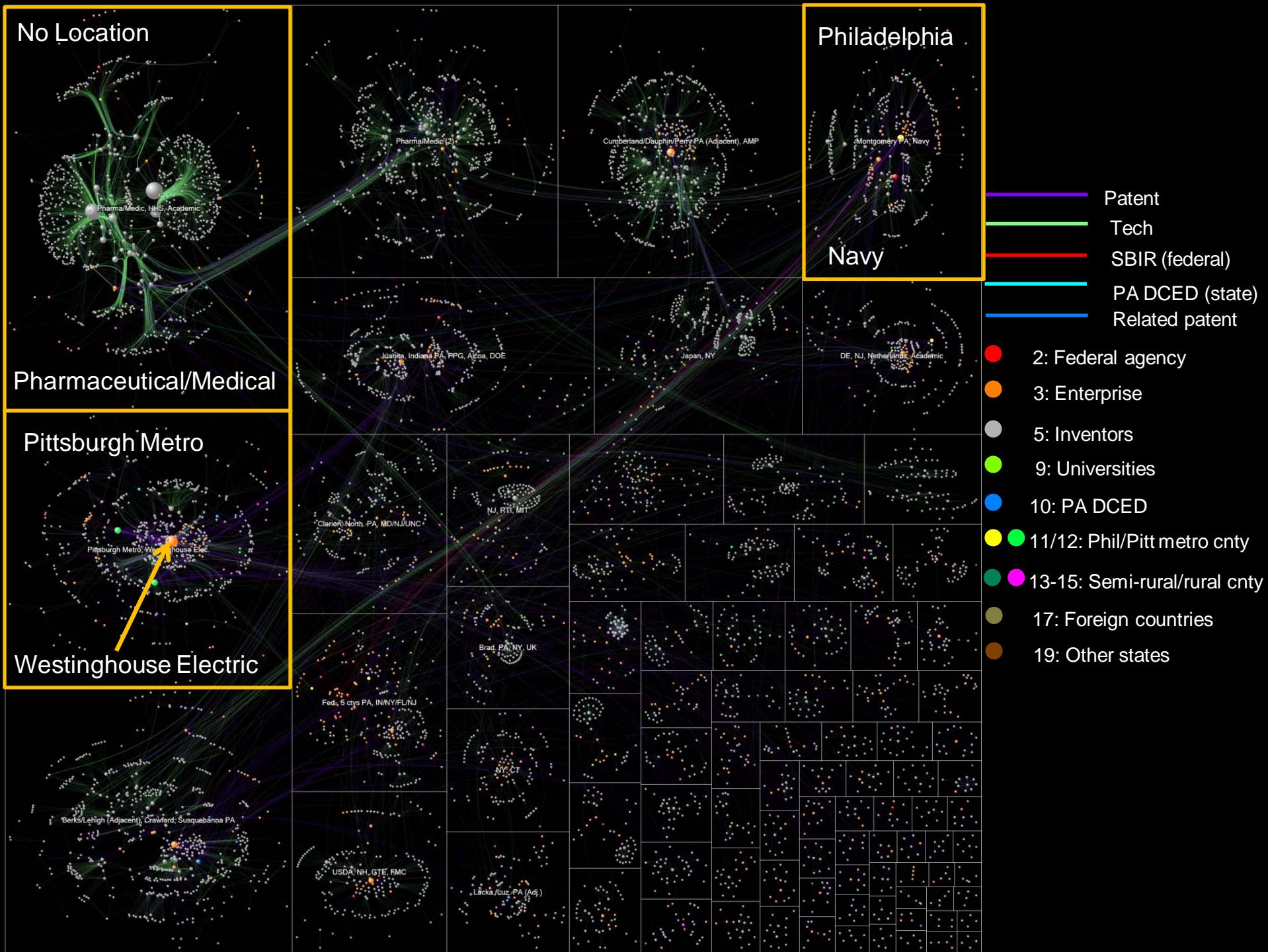


# Flickr clusters for “mouse”

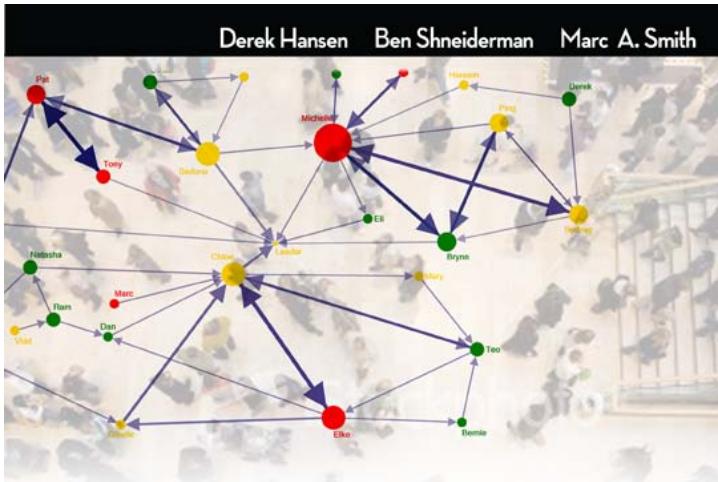


**Figure 7.11. : Lobbying Coalition Network** connecting organizations (vertices) that have jointly filed comments on US Federal Communications Commission policies (edges). Vertex Size represents number of filings and color represents Eigenvector Centrality (pink = higher). Darker edges connect organizations with many joint filings. Vertices were originally positioned using Fruchterman-Rheingold and hand-positioned to respect clusters identified by NodeXL's Find Clusters algorithm.





# Analyzing Social Media Networks with NodeXL



# Analyzing Social Media Networks with NodeXL

## Insights from a Connected World



## I. Getting Started with Analyzing Social Media Networks

1. Introduction to Social Media and Social Networks
  2. Social media: New Technologies of Collaboration
  3. Social Network Analysis

## II. NodeXL Tutorial: Learning by Doing

4. Layout, Visual Design & Labeling
  5. Calculating & Visualizing Network Metrics
  6. Preparing Data & Filtering
  7. Clustering & Grouping

### III Social Media Network Analysis Case Studies

8. Email
  9. Threaded Networks
  10. Twitter
  11. Facebook
  12. WWW
  13. Flickr
  14. YouTube
  15. Wiki Networks

# Social Media Research Foundation



We are a group of researchers who want to create **open tools**, generate and host **open data**, and support **open scholarship** related to social media.

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# Let's get to work!

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- Do great research!!!! → **Inspirational**
- **Government**
  - National Initiative for Social Participation
  - Develop Federal & Local applications
- **Universities**
  - Add courses & degree programs
  - Help Federal & Local governments
- **Industry**
  - Offer researchers access to data
  - Develop infrastructure and analysis tools

