

# Documenting & Measuring Collaboration

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JEAN HALEY - NORTH CENTRAL IPM CENTER

# Overview

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Documenting & measuring collaboration

Regional IPM Center Pilot Test

How to map your own networks

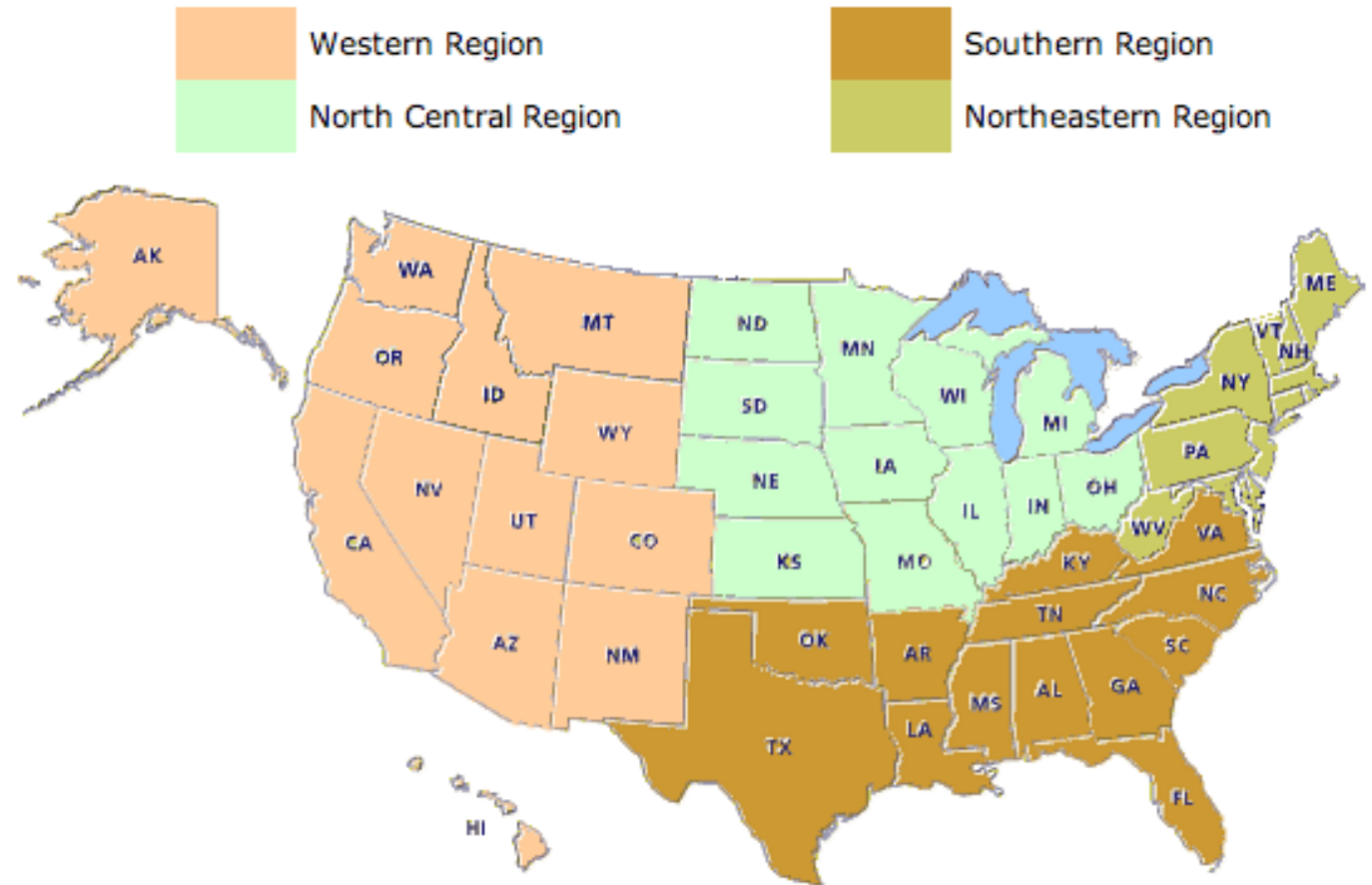
Online evaluation resources

# Documenting & Measuring Collaboration

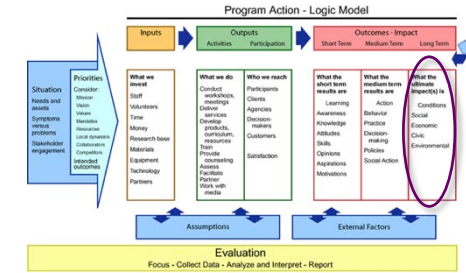
## Why?

Establish and maintain **interactive information networks** that cross traditional institutional, disciplinary, programmatic, and geographic boundaries to **address regional IPM priorities**.

-2014 CPPM RFA



# Outcomes & Impacts



## Healthy People



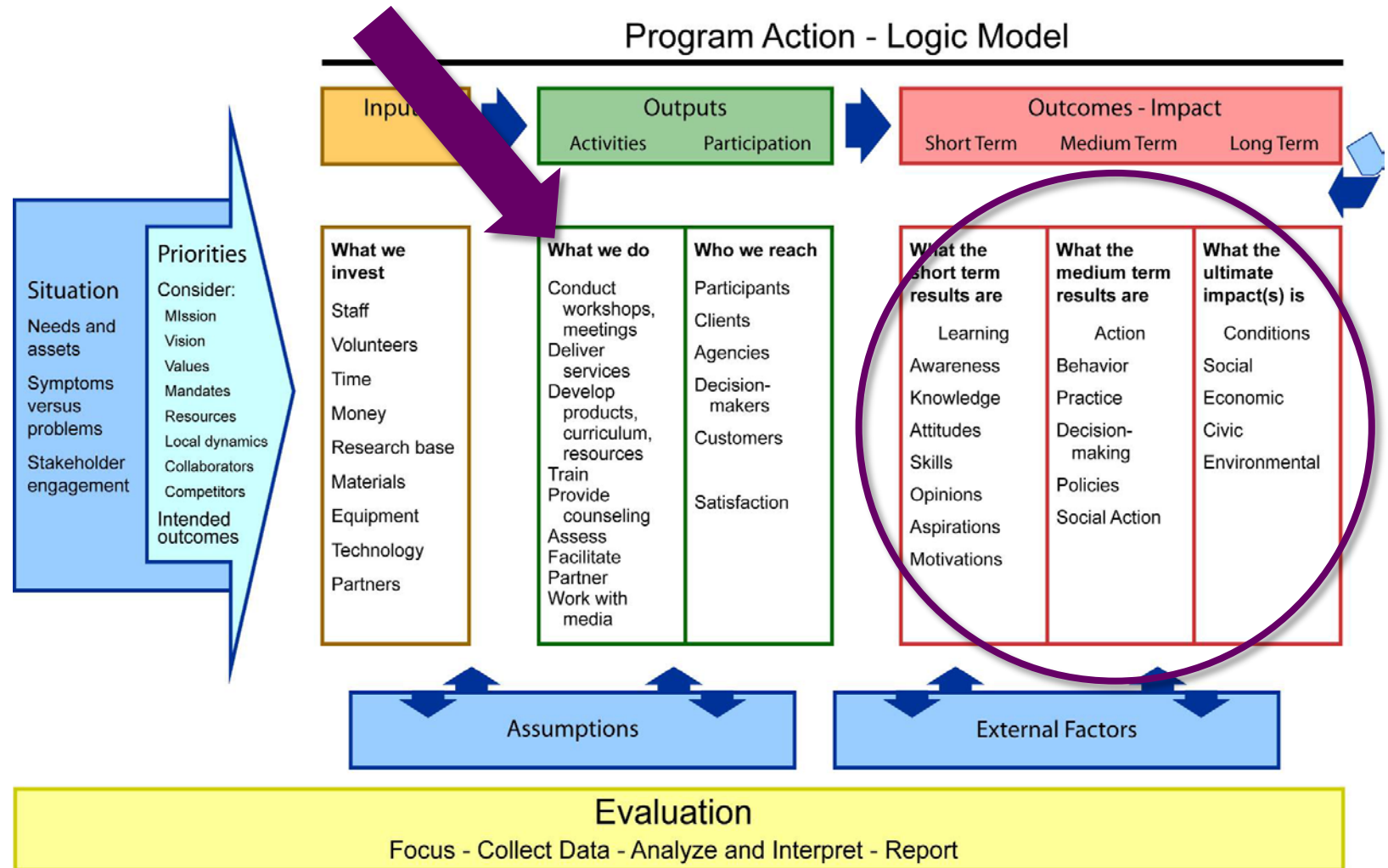
## Healthy Environment



## Healthy Economy

“How can I  
make what I  
have work  
better?”

- Jim VanKirk



<http://www.uwex.edu/ces/pdande/evaluation/evallogicmodel.html>

# Documenting & Measuring Collaboration

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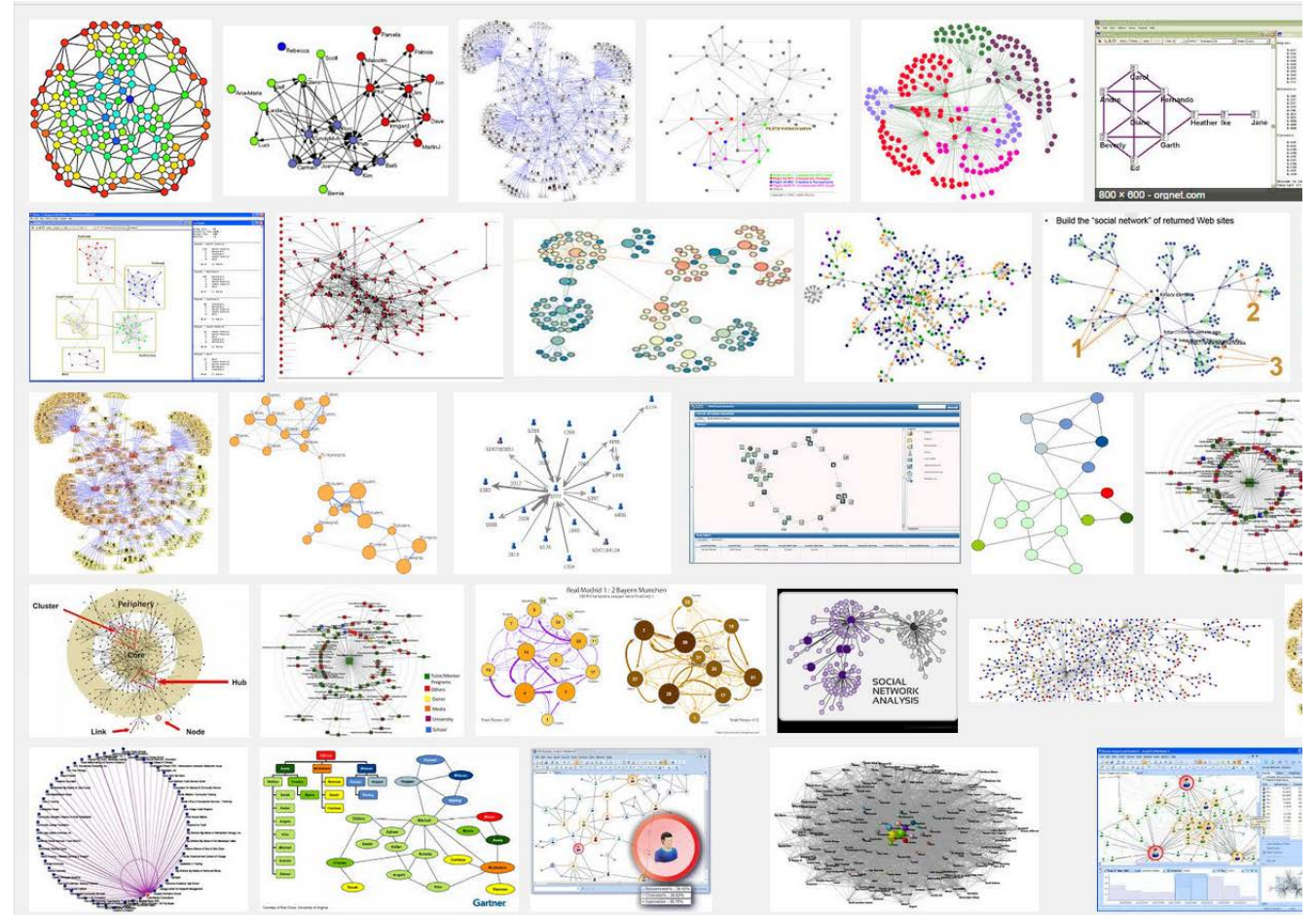
HOW?



# How?

## Social Network Analysis

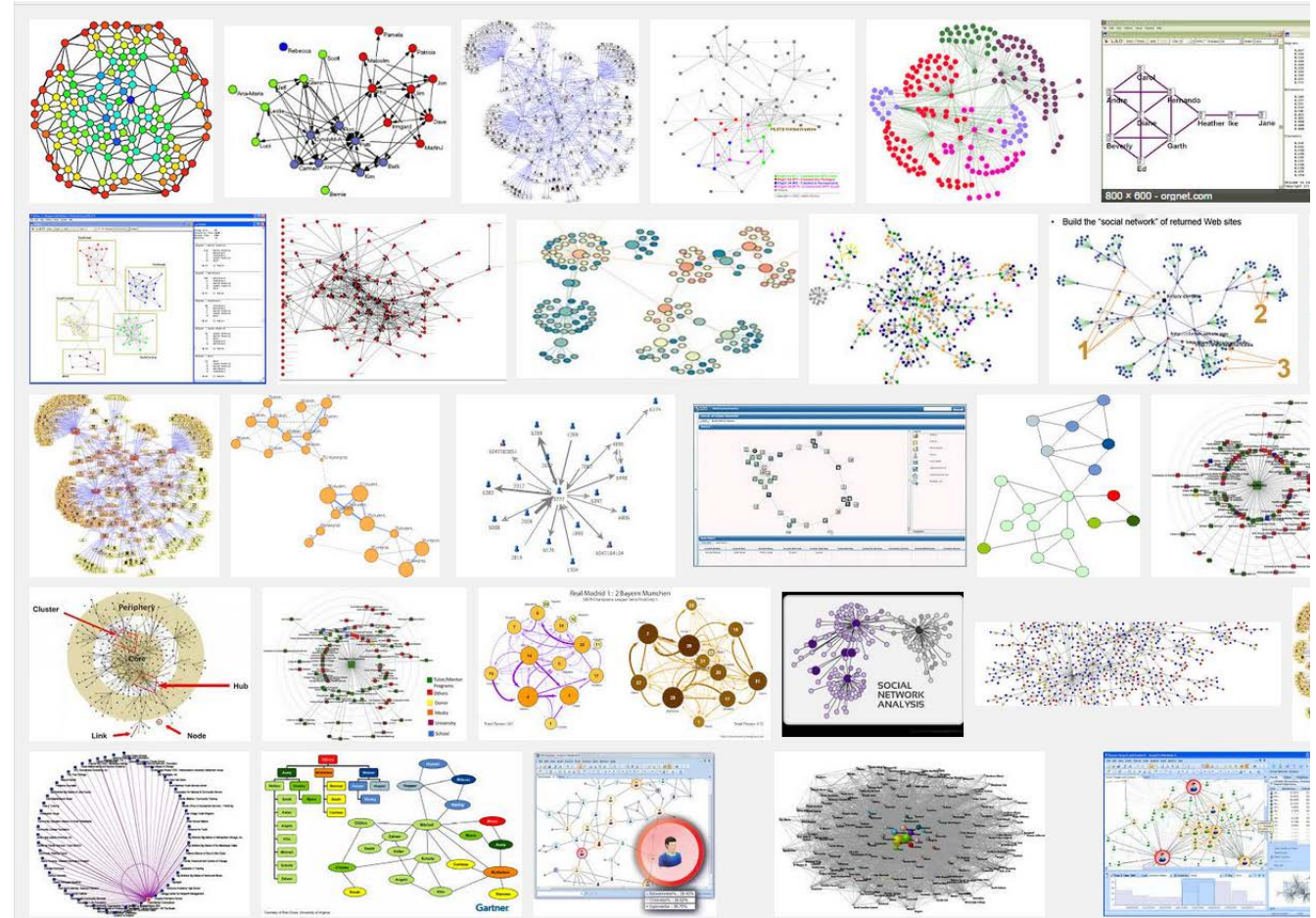
How many are already familiar with this?



# Social network analysis

Connections

Relationships





# Social network analysis

**Connections**

**Relationships**



# NCIPMC networks

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## Networks of association

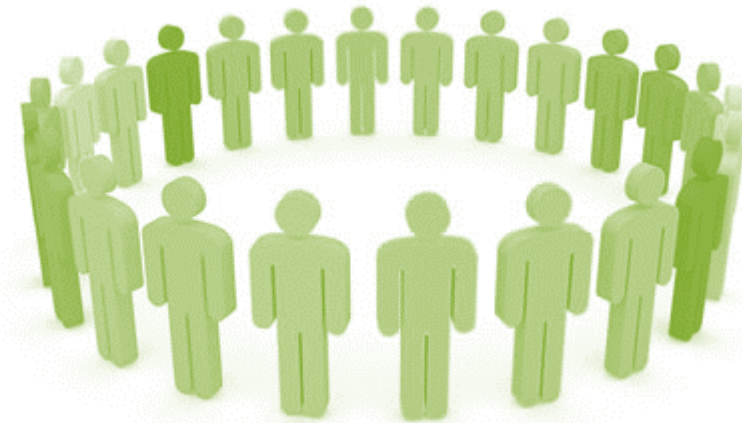


# NCIPMC networks

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Networks of association

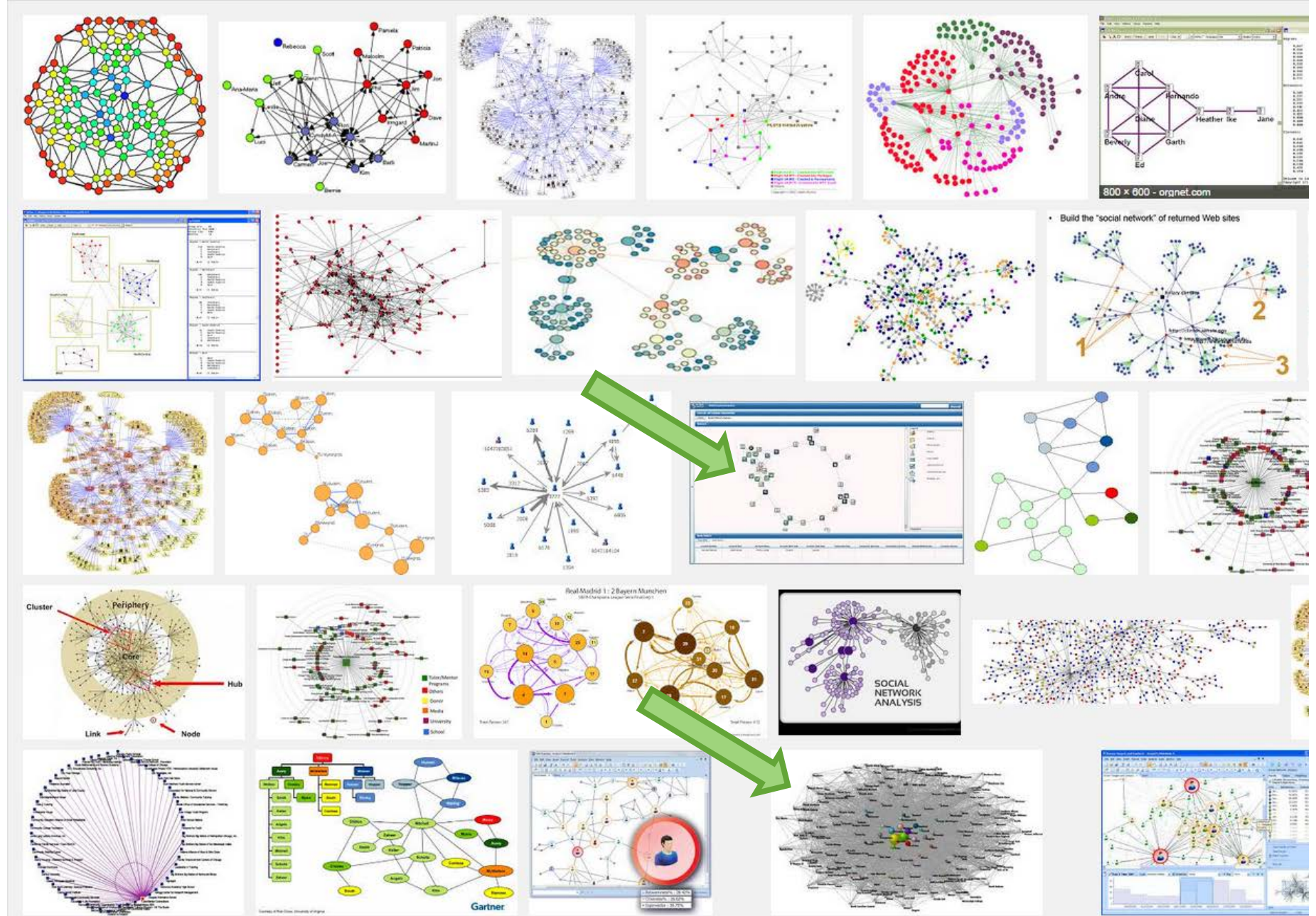
Networks of collaboration





# Network structure measures

## Density



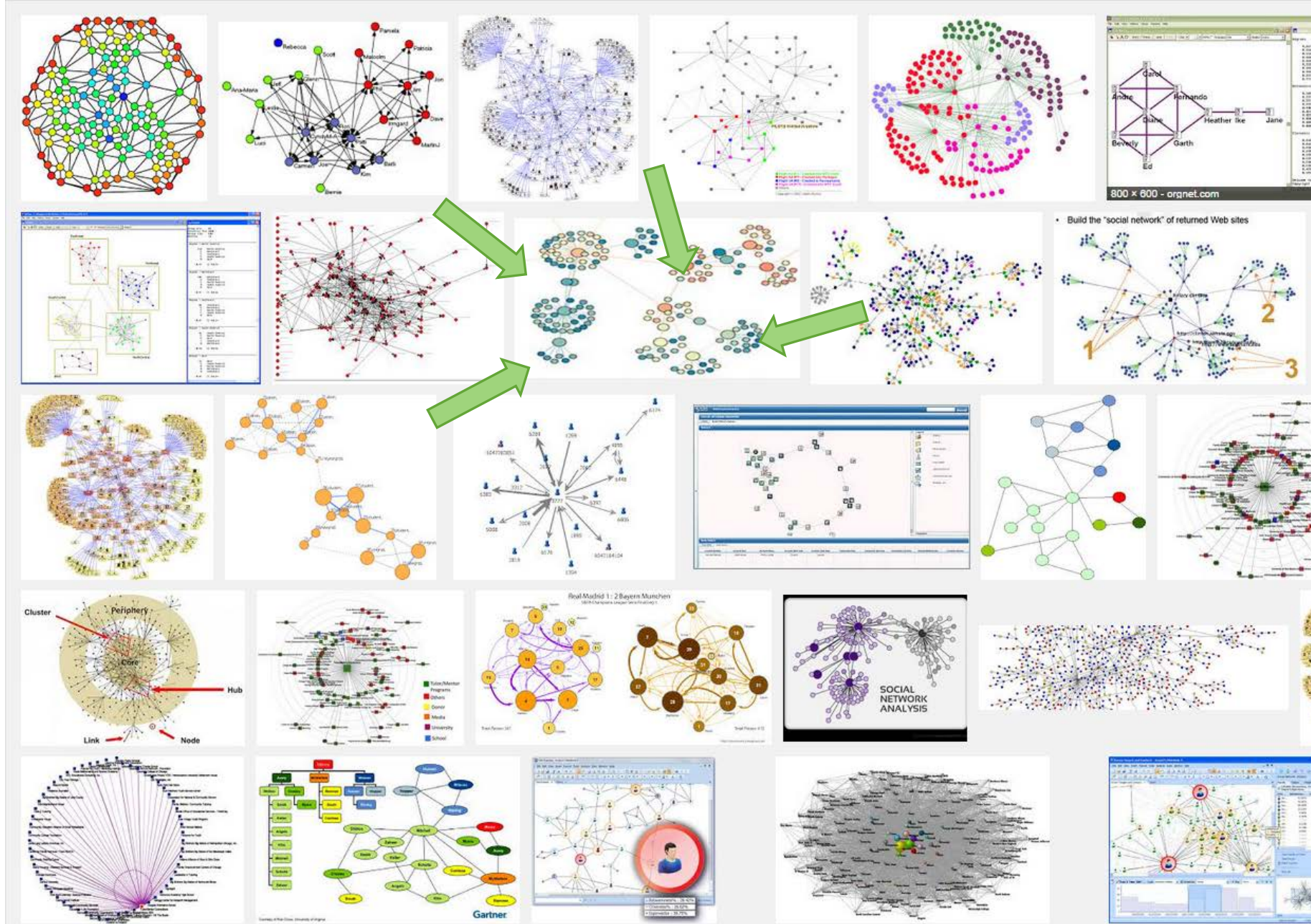


# Distance





# Clusters / cliques



# Documenting & Measuring Collaboration

## SNA Centrality Measures

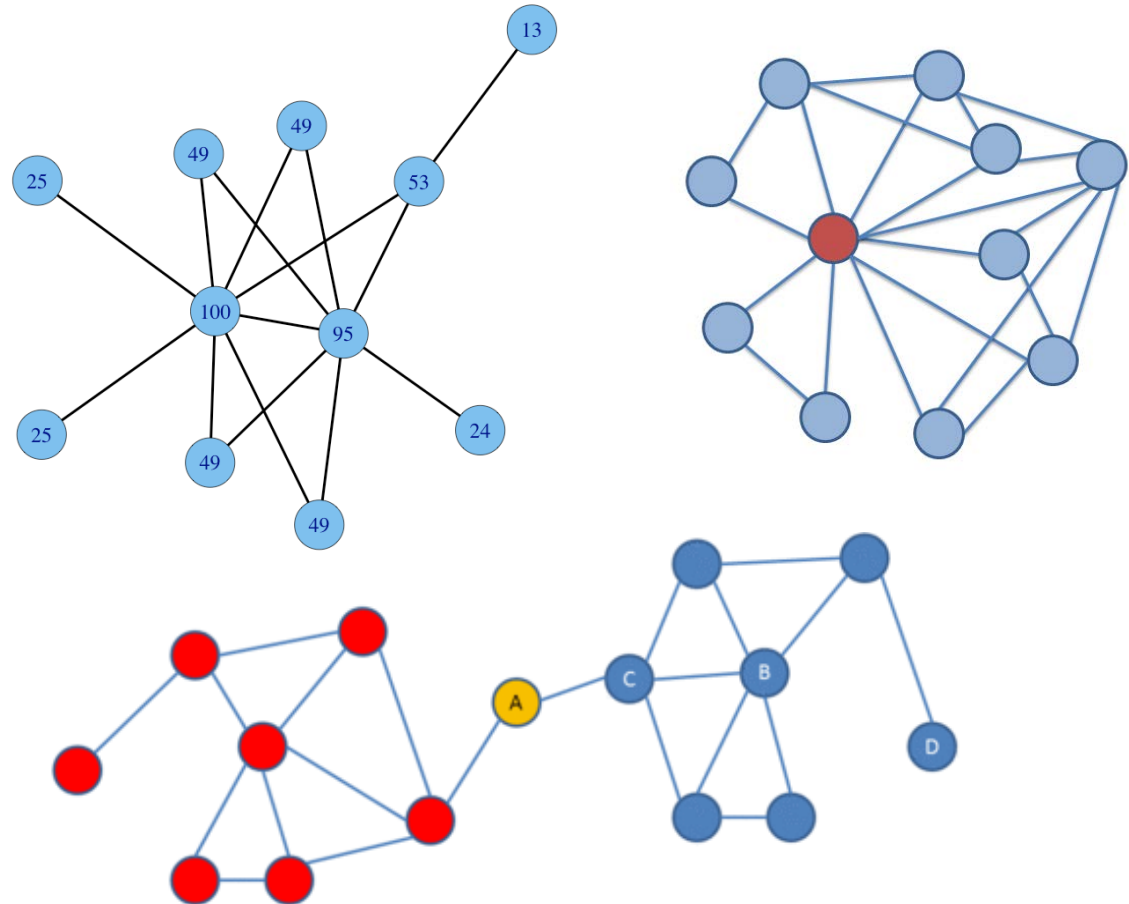
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**Degree**

**Betweenness**

**Closeness**

**Eigenvector**

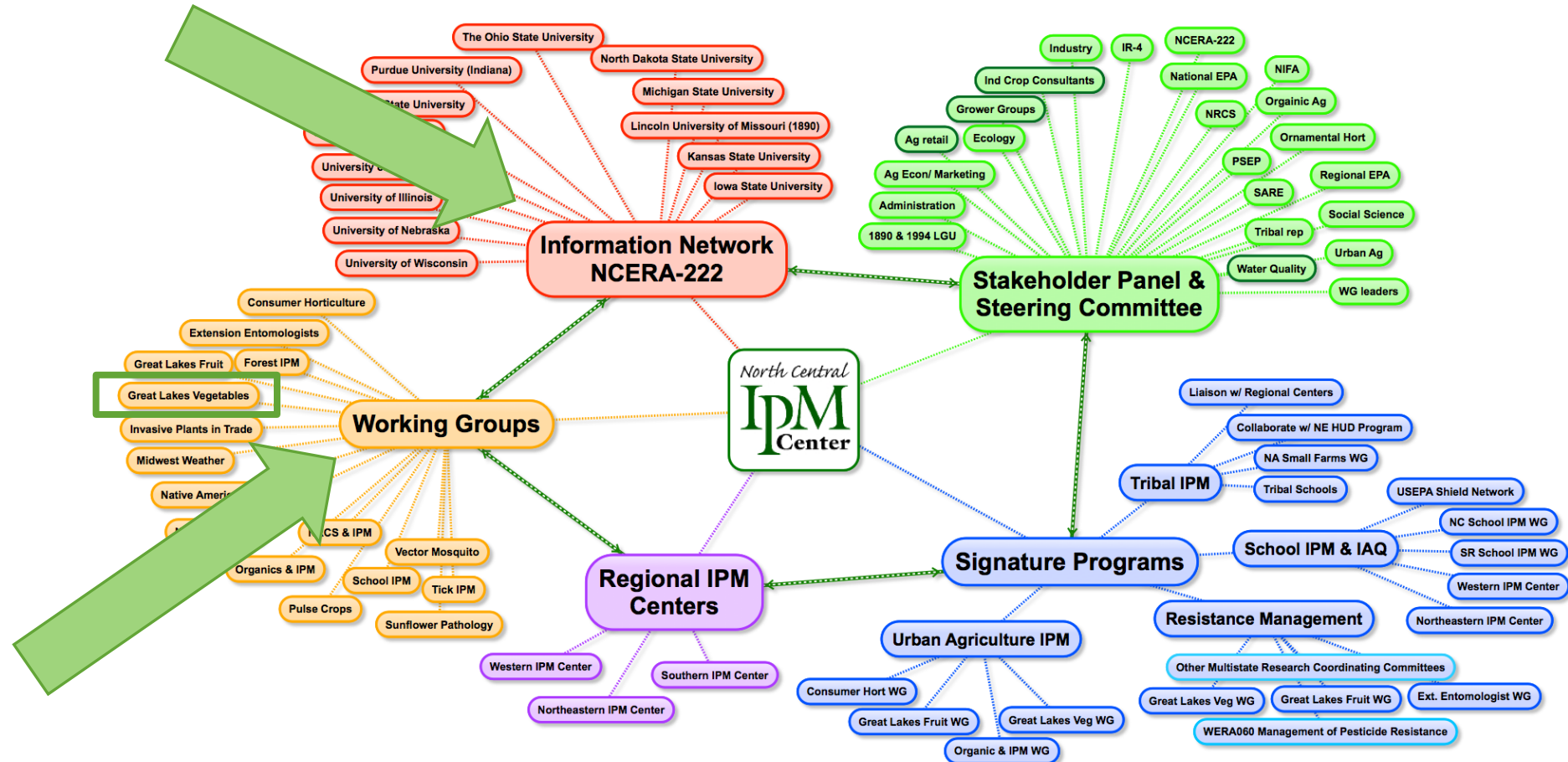


# Documenting & Measuring Collaboration

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WHAT?

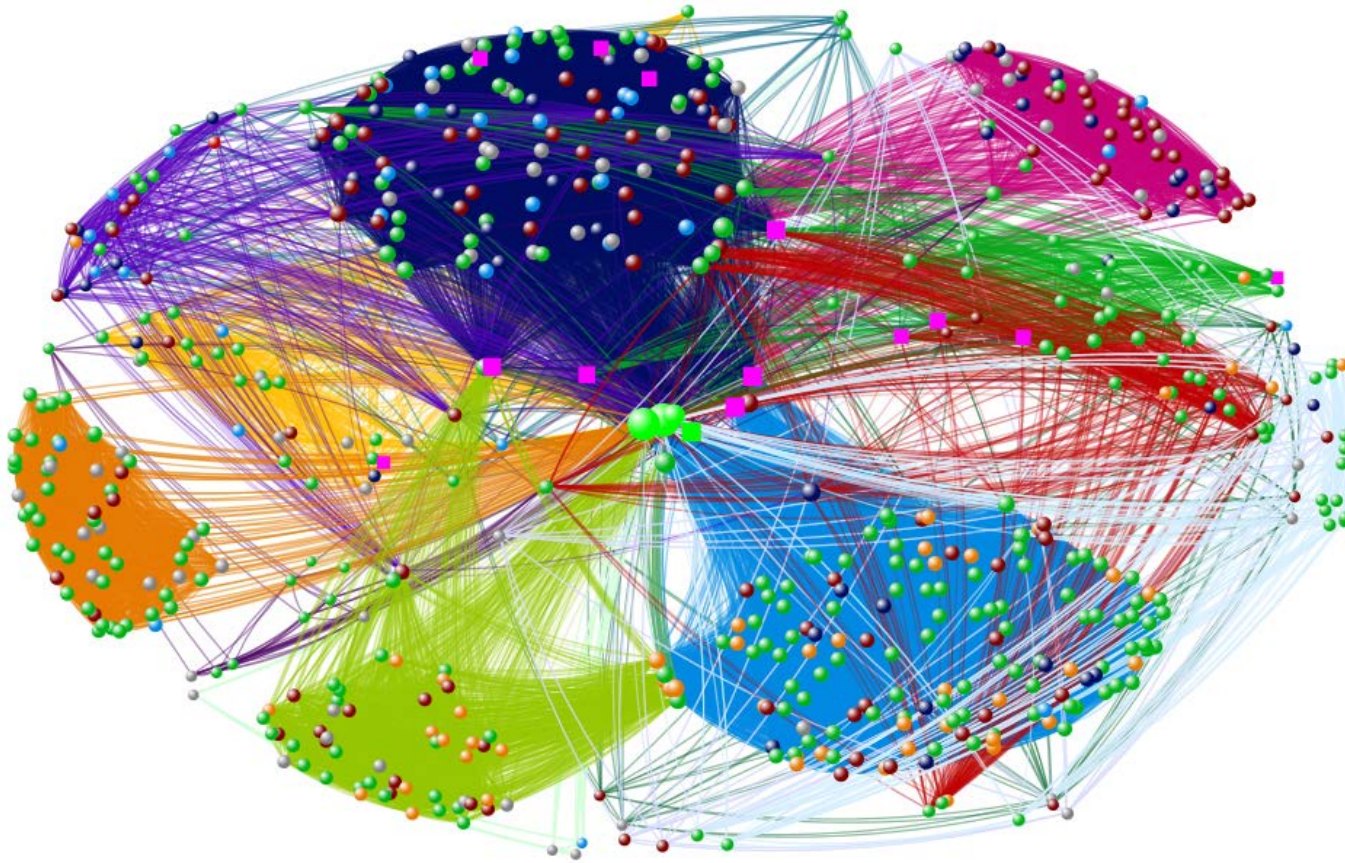
# What? NCIPMC Partnership network





# Big Picture NCIPMC Working Groups

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Nodes = 617

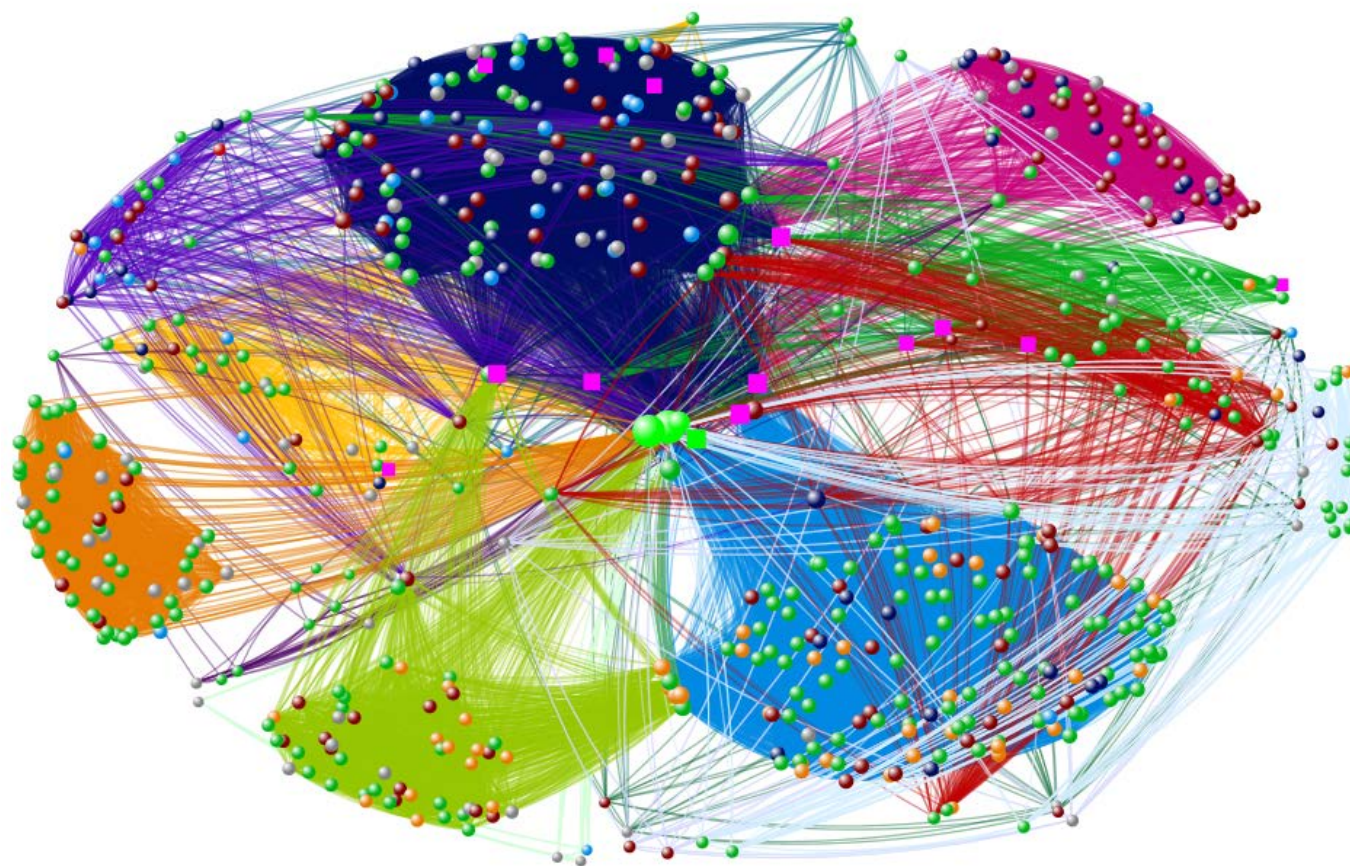
Unique edges = 4,552

Total edges = 55,531

NCERA-222 partner  
institution  
members = 214



# Big Picture NCIPMC Working Groups



## Edge Properties (lines = Working Groups)

Consumer Horticulture	Northern Plains
Extension Entomologists	NRCS & IPM
Forest IPM	Organics & IPM
Great Lakes Fruit IPM	Pulse Crops
Great Lakes Vegetable IPM	School IPM
Invasive Plants in Trade	Sunflower Pathology
Midwest Weather	Tick IPM
Native American IPM	Vector Mosquito

## Node Properties (Regions)

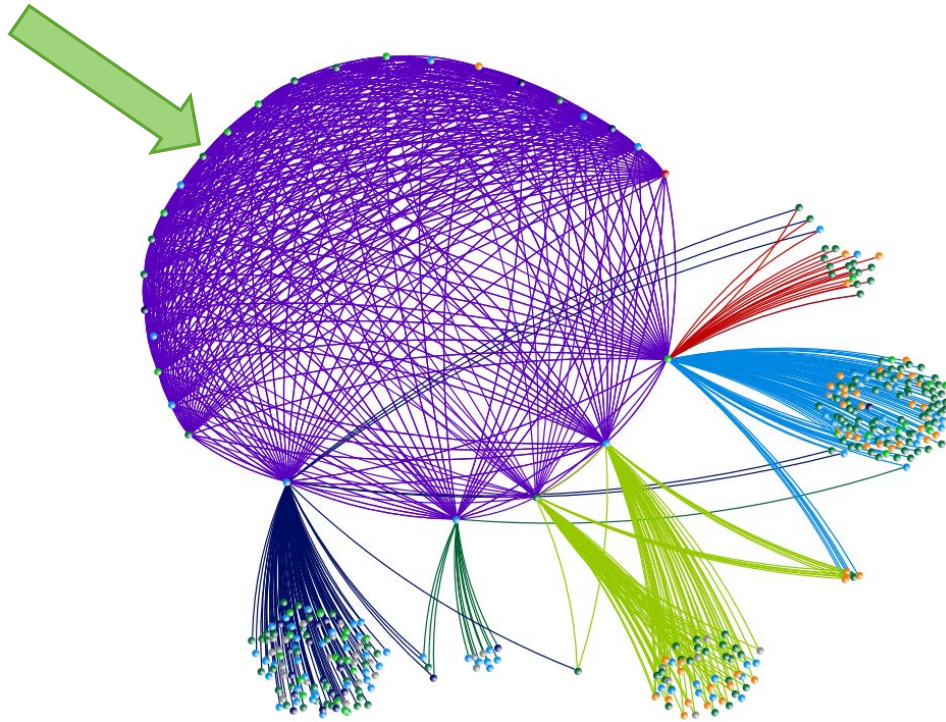
Canada	Northeast
NCERA-222	North Central
NCIPMC Staff	South
Europe	West



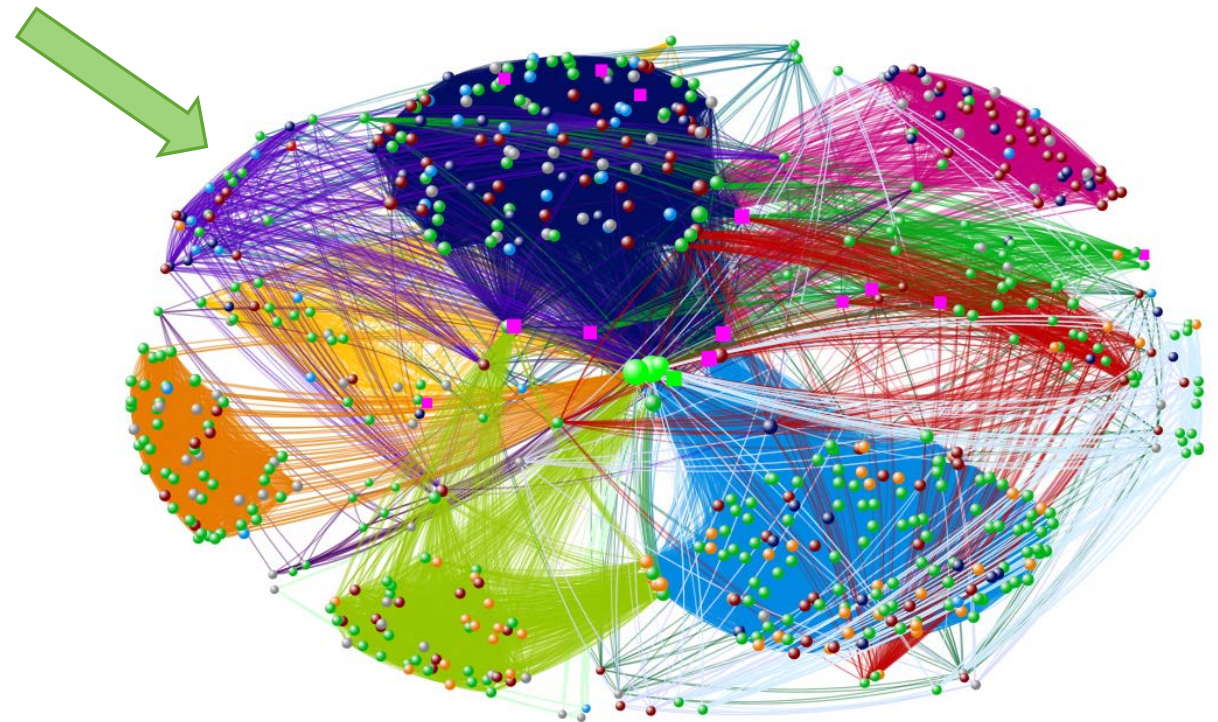
# Who are some of the key players?

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MIDWEST WEATHER WORKING GROUP



ALL NCIPMC WORKING GROUPS

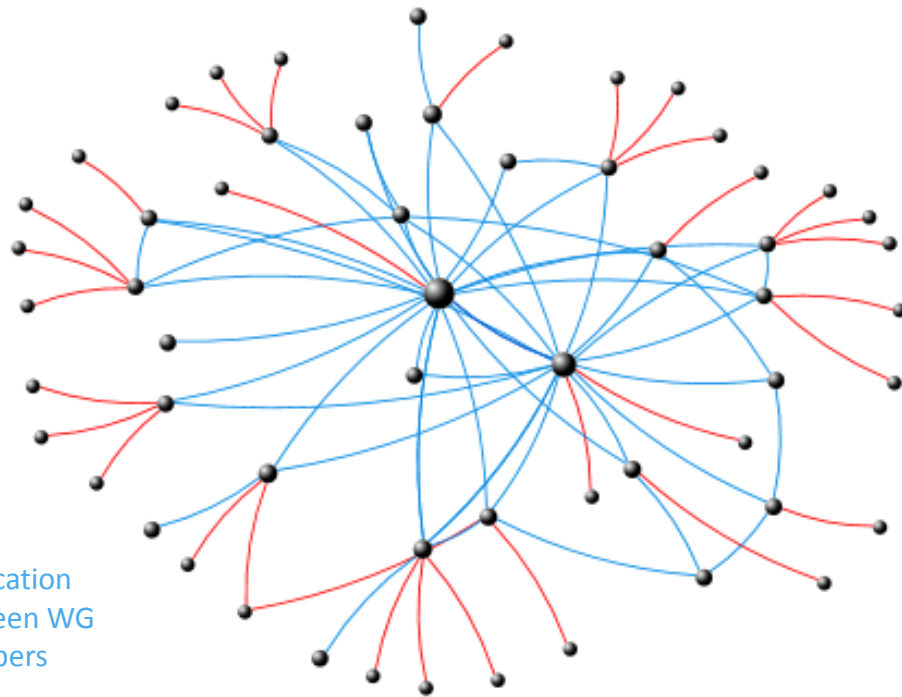


# Regional IPM Centers SNA Pilot Test

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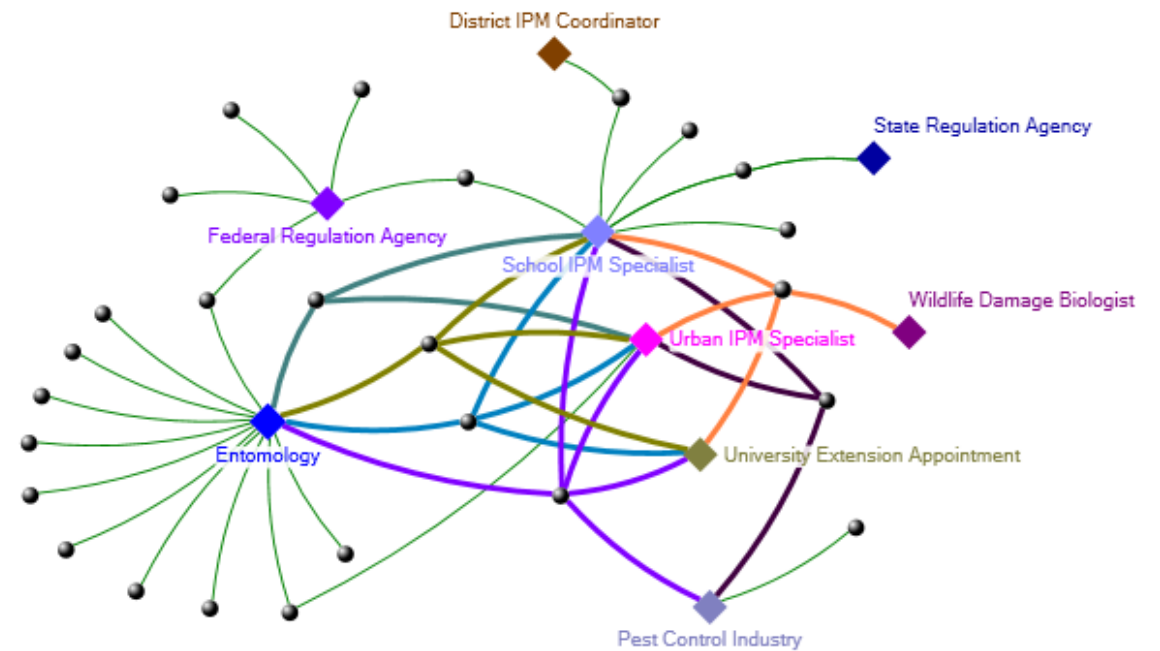
SOME RESULTS

# Southern IPM Center – Network Reach & Diversity



Blue = Communication  
between WG  
members

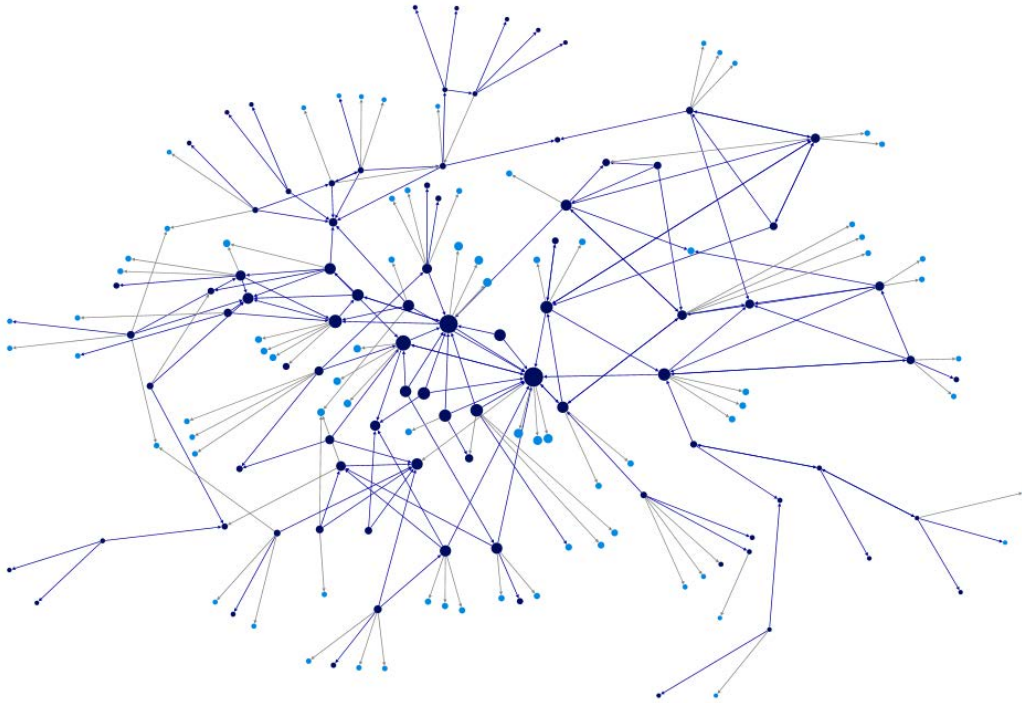
Red = Communication  
between WG members  
and  
non-WG member



# North Central IPM Center – **Influencers** in the network

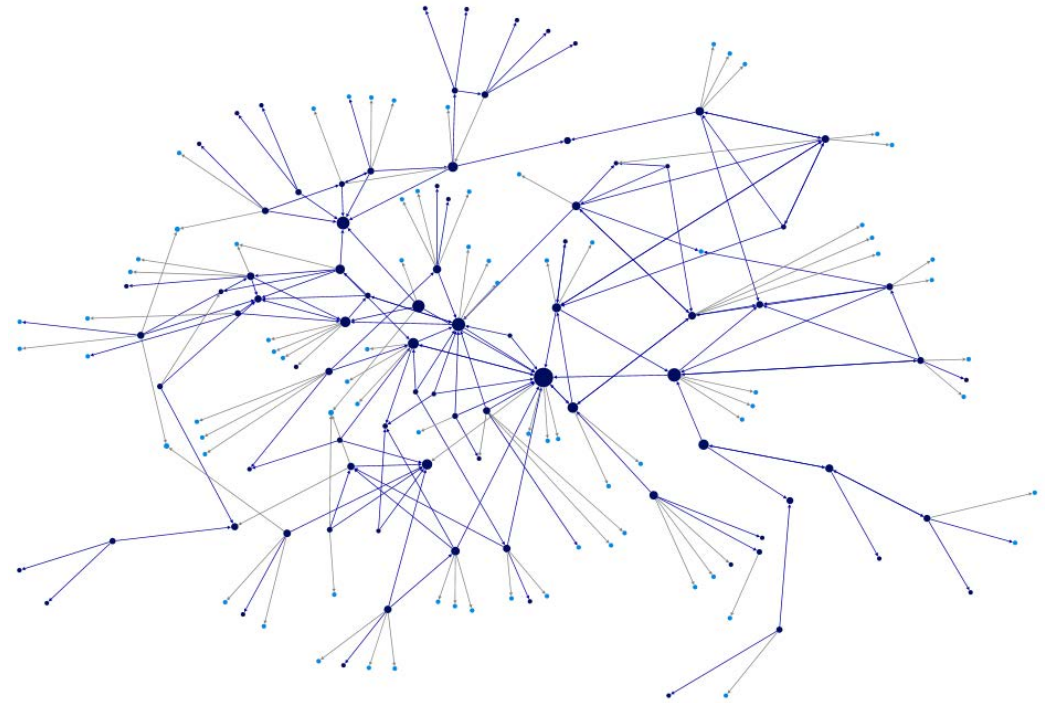
## EIGENVECTOR CENTRALITY

IMPORTANCE – WHO'S LISTENED TO? WHO'S  
CONNECTED TO THOSE PEOPLE?



## BETWEENNESS CENTRALITY

HOW MANY SHORTEST PATHS ARE YOU ON?

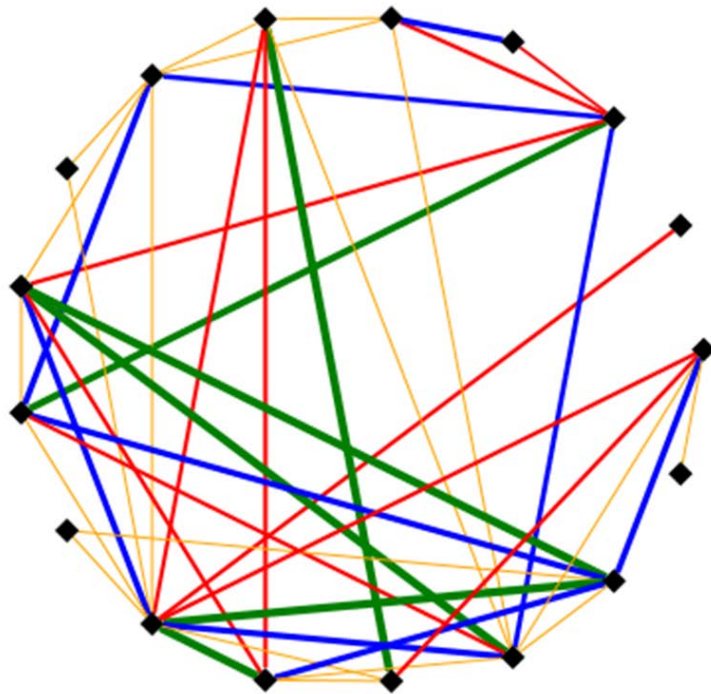




# Northeastern IPM Center – Changes over time in network density

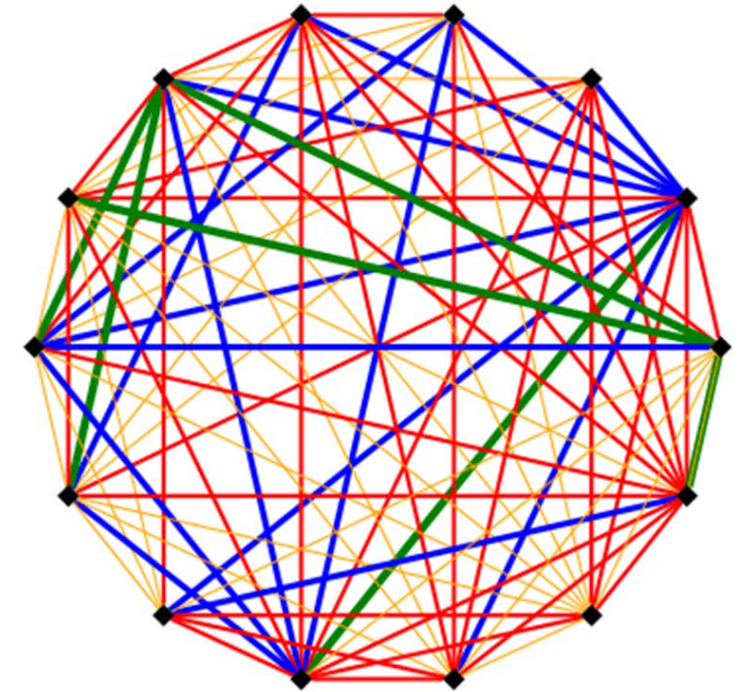
## BASELINE

STRENGTH OF CONNECTIONS BEFORE WG  
FORMATION



## YEAR 1 FOLLOW-UP

STRENGTH OF CONNECTIONS AFTER 1 YEAR OF  
COLLABORATION



Frequency of communication  
about the WG topic with  
other WG members

Orange = Rarely

Red = Occasionally

Blue = Often

Green = A Great Deal

# How hard is it to make a network map?

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4 STEPS + LIVE DEMO

# Download NODEXL at: Nodexl.codeplex.com

The screenshot shows the NodeXL project page on CodePlex. The browser address bar displays "nodexl.codeplex.com". The CodePlex header includes the site name, a search bar, and links for "Register" and "Sign In". The main heading is "NodeXL: Network Overview, Discovery and Exploration for Excel". Below this is a navigation menu with tabs: HOME, SOURCE CODE, DOWNLOADS, DOCUMENTATION, DISCUSSIONS, ISSUES, PEOPLE, and LICENSE. The "HOME" tab is selected. A "socialmedia RESEARCH FOUNDATION" logo is present, along with a "Donate" button and a list of payment methods (VISA, MasterCard, American Express, PayPal). A description states: "NodeXL is a free, open-source template for Microsoft® Excel® 2007, 2010 and 2013 that makes it easy to explore network graphs. With NodeXL, you can enter a network edge list in a worksheet, click a button and see your graph, all in the familiar environment of the Excel window." An image shows the NodeXL interface within the Excel application. A "download" button is prominent. To the right, a table lists project details: CURRENT (NodeXL Excel Template 2014), DATE (Thu Jan 23, 2014 at 7:00 AM), STATUS (Beta), DOWNLOADS (84,950), and RATING (7 ratings). Below this is a "MOST HELPFUL REVIEWS" section with two star-rated reviews. The bottom of the page features a "Visit the NodeXL Graph Gallery" link and a small image of a network graph.

CodePlex Project Hosting for Open Source Software

Register Sign In Search all projects

## NodeXL: Network Overview, Discovery and Exploration for Excel

HOME SOURCE CODE DOWNLOADS DOCUMENTATION DISCUSSIONS ISSUES PEOPLE LICENSE

Page Info Change History (all pages) Follow (340) Subscribe

socialmedia RESEARCH FOUNDATION

OPEN TOOLS, OPEN DATA, OPEN SCHOLARSHIP FOR SOCIAL MEDIA

NodeXL is a free, open-source template for Microsoft® Excel® 2007, 2010 and 2013 that makes it easy to explore network graphs. With NodeXL, you can enter a network edge list in a worksheet, click a button and see your graph, all in the familiar environment of the Excel window.

Visit the NodeXL Graph Gallery to see the wide variety of graphs that have been created by the

download

CURRENT	NodeXL Excel Template 2014
DATE	Thu Jan 23, 2014 at 7:00 AM
STATUS	Beta
DOWNLOADS	84,950
RATING	7 ratings

Review this release

### MOST HELPFUL REVIEWS

★★★★☆ Overall, thank you for creating a program so that non-computer science policy persons can harness the power of social media data for... (more)

★★★★★ NodeXL is the best SNA tool I have ever used. It is especially user-friendly and I'm continually impressed by how the developers upd... (more)

View all reviews



from your online **survey into Excel.**

IPMSympSample - Excel

FILE HOME INSERT PAGE LA FORMUL DATA REVIEW VIEW DEVELO ACROBA POWERP Haley, J...

Paste Clipboard Font Alignment Styles

Conditional Formatting Format as Table Cell Styles

Cells Editing

A1

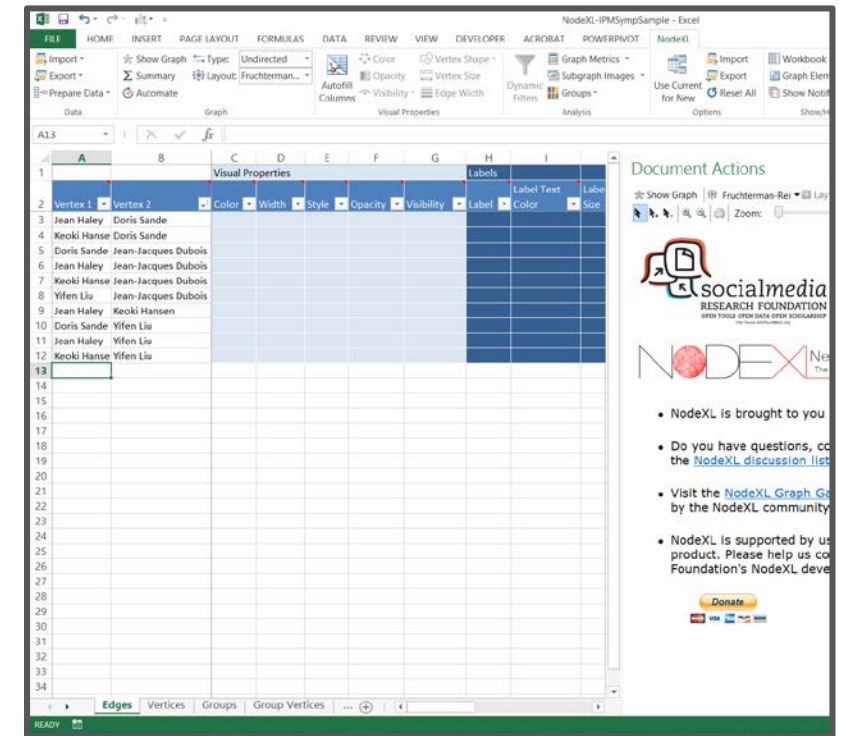
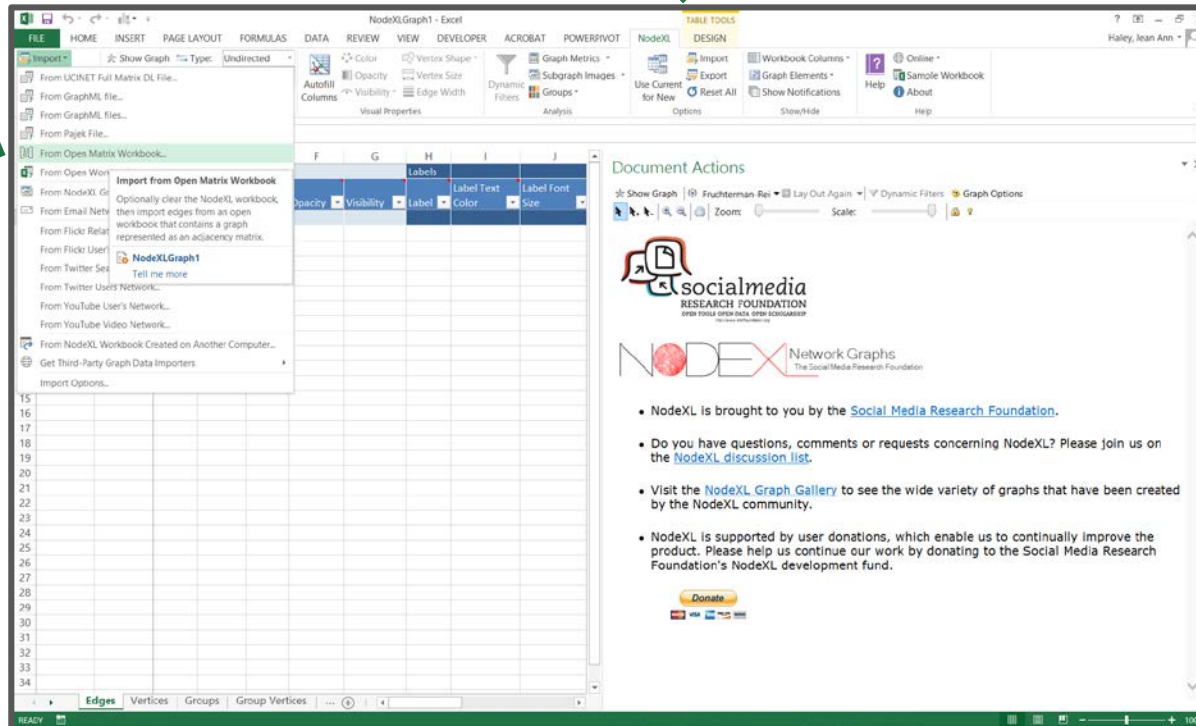
	A	B	C	D	E	F
1		Jean Haley	Keoki Hansen	Doris Sande	Yifen Liu	Jean-Jacques Dubois
2	Jean Haley	0	1	1	1	1
3	Keoki Hansen	1	0	1	1	1
4	Doris Sande	1	1	0	1	1
5	Yifen Liu	1	1	1	0	1
6	Jean-Jacques Dubois	1	1	1	1	0

Sheet1

READY 100%

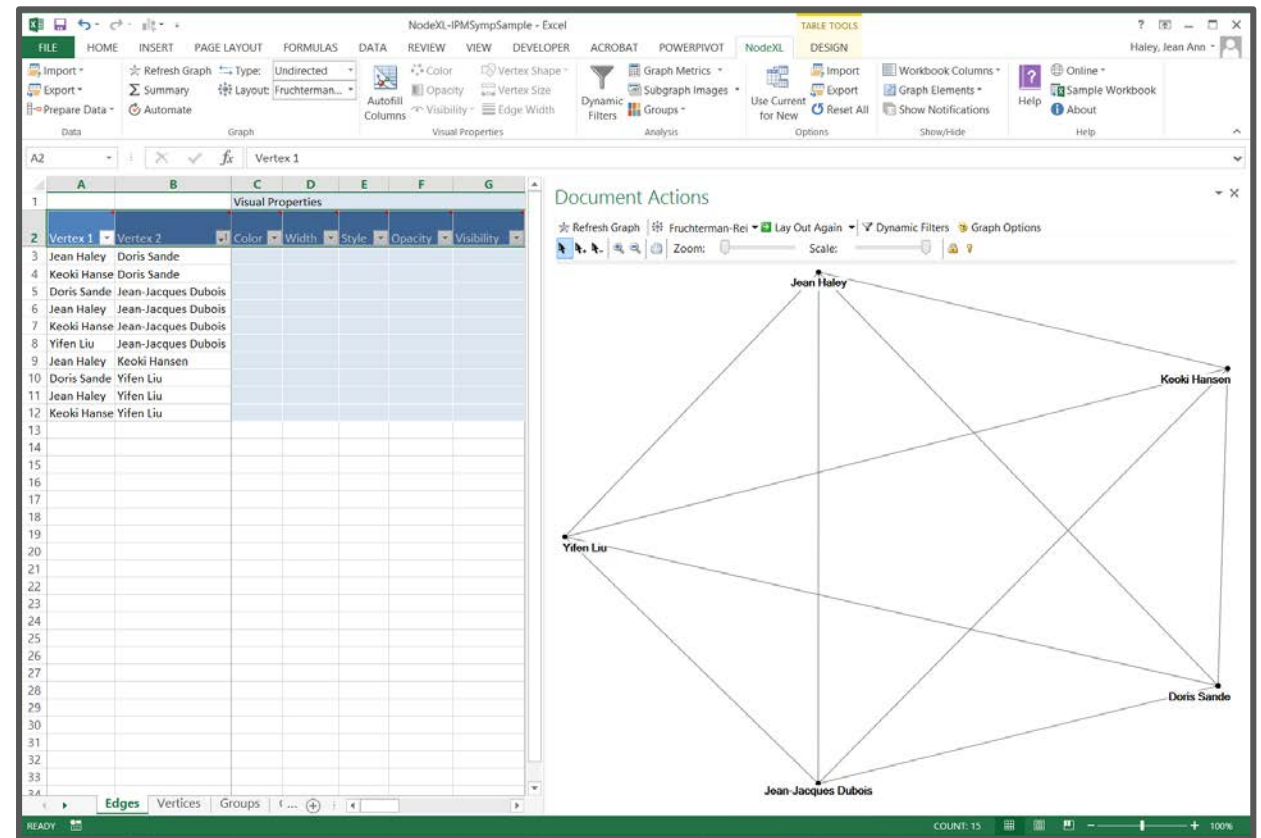
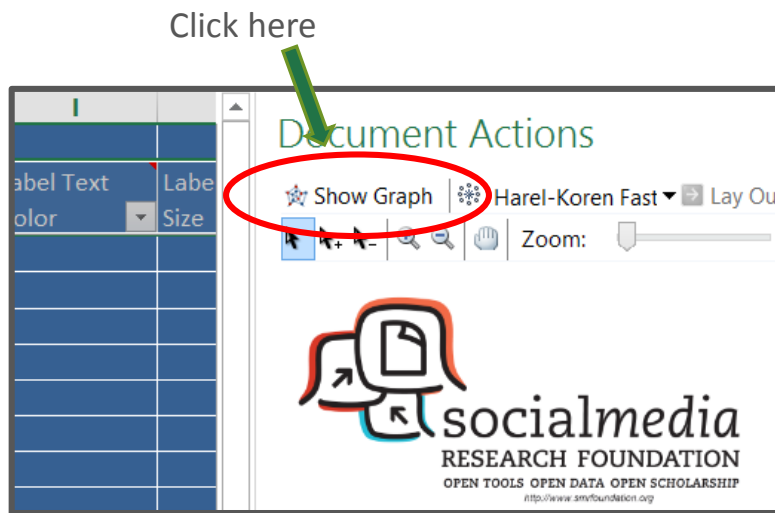
# Import your matrix data from Excel into NODEXL.

Make sure you are on the NODEXL tab





# Visualize your data.



# Dude, where can I find some resources?

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ONLINE

# A Toolkit for Assessing IPM Outcomes and Impacts

[SKIP TO CONTENT](#) [SITE MAP](#)



PRINT

Welcome-Who Is This For And How Will It Help Me?

Things You Should Know Before Evaluation

Module 1: Getting Started with IPM Evaluation Planning

Module 2: Surveys

Module 3: Economic Analyses

Module 4: Focus Groups

Module 5: Secondary Data

Module 6: Case Study

Module 7: Interviews

Module 8: Social Network Analysis

■ When Is It Appropriate to do a Social Network Analysis?

■ What Data to Collect

■ How to Collect the Data

■ How to Analyze It

■ How to Report Social Network Analysis Results

■ How to Engage An Evaluation

## Module 8: Social Network Analysis

### Social Networks and Social Network Analysis

There are two distinct, but related uses of the term "Social Network". The term is sometimes used as a collective name for the software and users of popular online networking sites such as Facebook, Twitter and LinkedIn. There is a more technical and more generic meaning for the term in which it encompasses any group of people who are connected to each other by any social property. We are concerned with the second and broader meaning. The [Wikipedia page](#) on the subject of Social Networks provides a good overview.

### Why Do a Social Network Analysis?

In studying social networks we are usually concerned with questions such as: Who asks who for advice?

- **What information sources do people consult?**
- **Who knows who?**
- **Which organizations are connected, and how?**

The adoption of new practices or technologies often depends on the extent to which potential adopters have the chance to meet each other, discuss their experiences, and learn from each other, so changes to the social network which lead to a higher number of effective interconnections might be expected to promote more rapid adoption. It is for this sort of reason that social network analysis can be useful in evaluation studies.

### About this Module

The rest of the pages in this module will guide you through some basic elements of Social Network Analysis