

# How to Document and Measure Your Collaborations Using Network Graphs

## Pilot Testing Social Network Analysis at the Regional IPM Centers

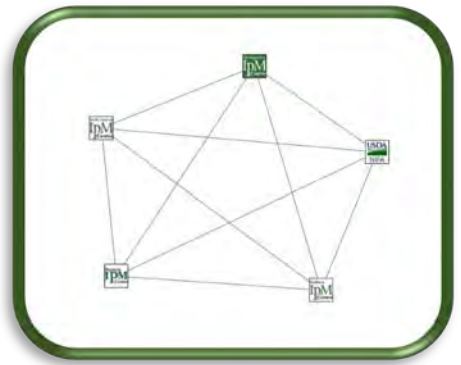
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### WHY we did it...


- Regional IPM Centers must... Establish and maintain **interactive information networks** that cross traditional institutional, disciplinary, programmatic, and geographic boundaries to **address regional IPM priorities**.  
-2014 Crop Protection Pest Management RFA
- Social Network Analysis (SNA) allows us to **understand, categorize, and quantify the relationships** in our information networks.
- SNA helps us identify key **influencers, subgroups**, and people who serve as **bridges** between subgroups.
- SNA is a great tool for **documenting Regional Centers' progress** toward increasing information flows across nontraditional boundaries.

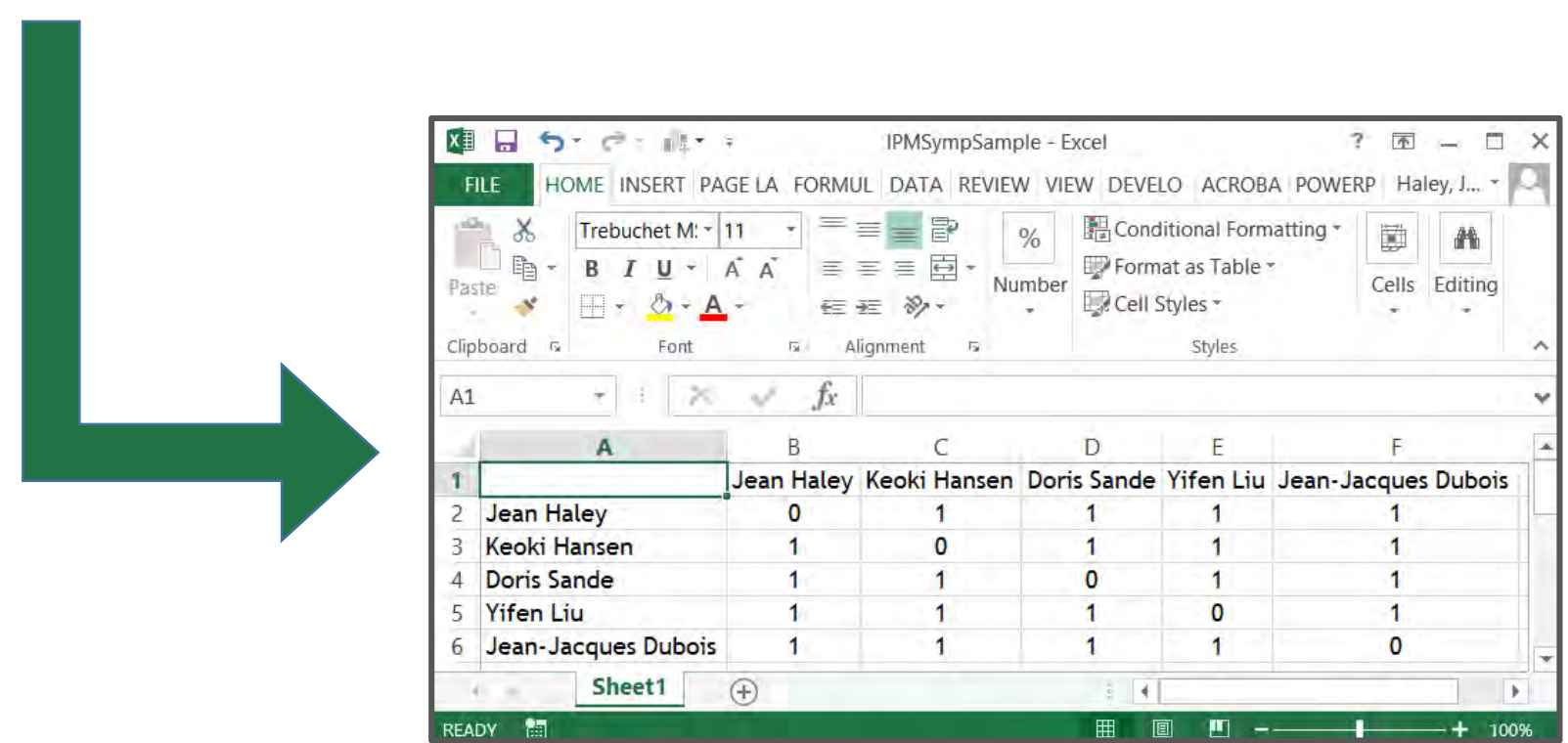
### HOW we did it...

- Regional Centers' Evaluation Specialists **developed a survey** that would work for all regions' Working Groups
- Got IRB approval** from each respective university
- Used Qualtrics** to send surveys
- Used NODEXL** to visualize and analyze networks

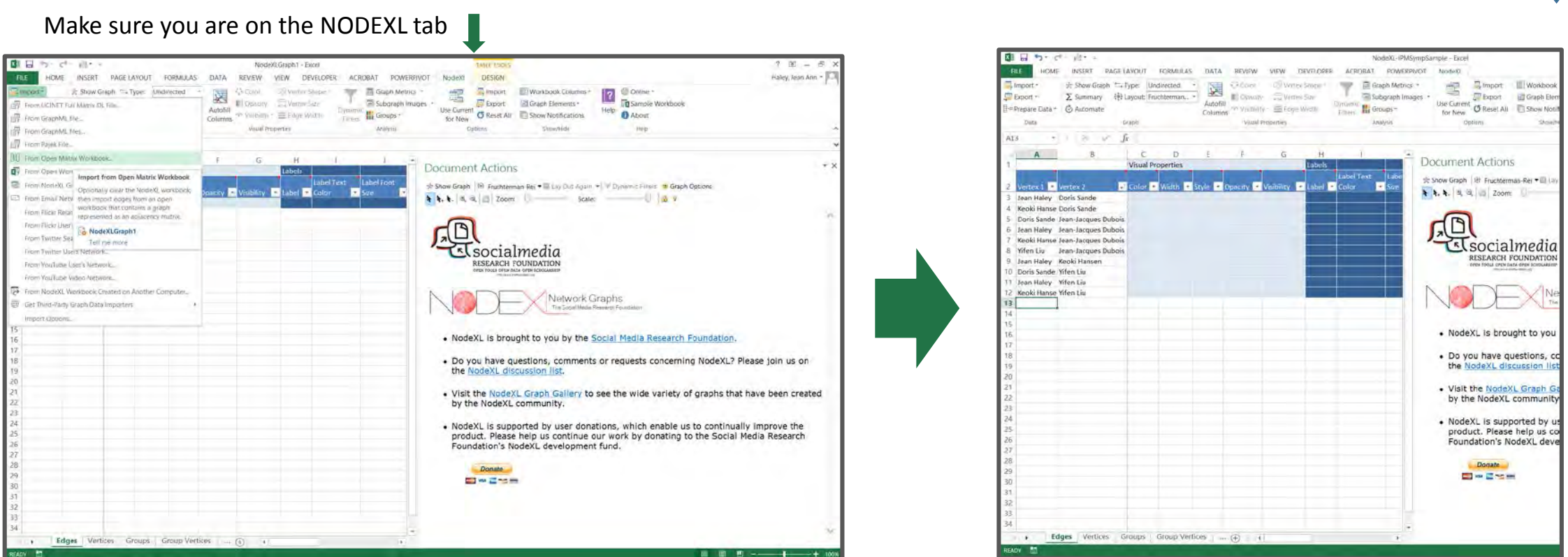


### CREATE your own SNA map with NODEXL

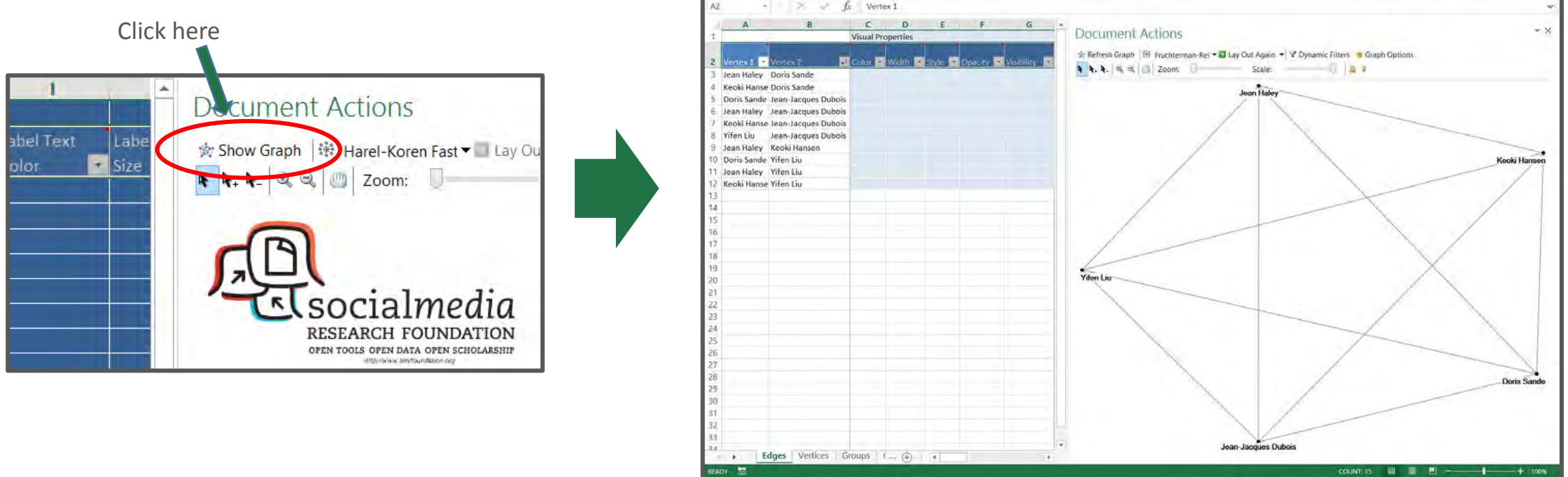
1. **Download NODEXL** at: [nodexl.codeplex.com](http://nodexl.codeplex.com)
2.  from your online **survey into Excel**.



3. **Import** your matrix data from **Excel into NODEXL**.



4. **Visualize** your data.

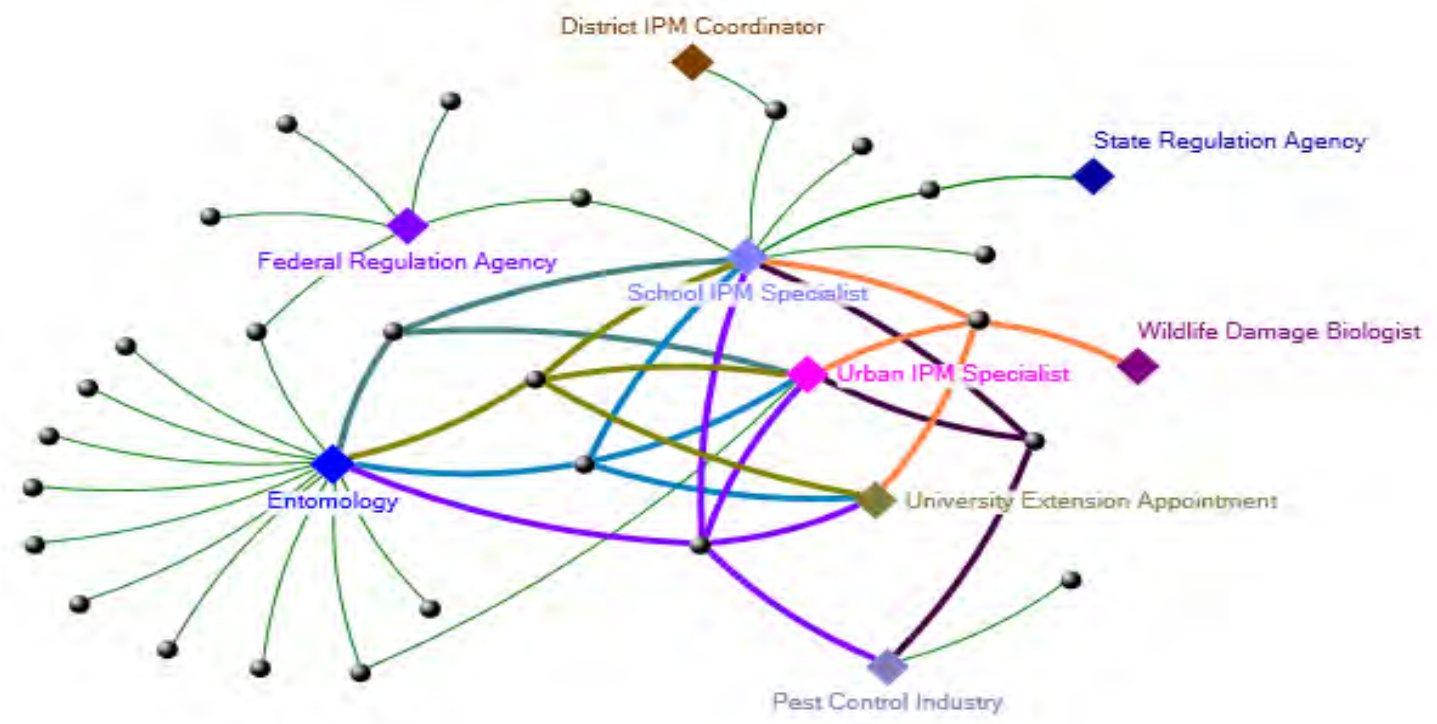
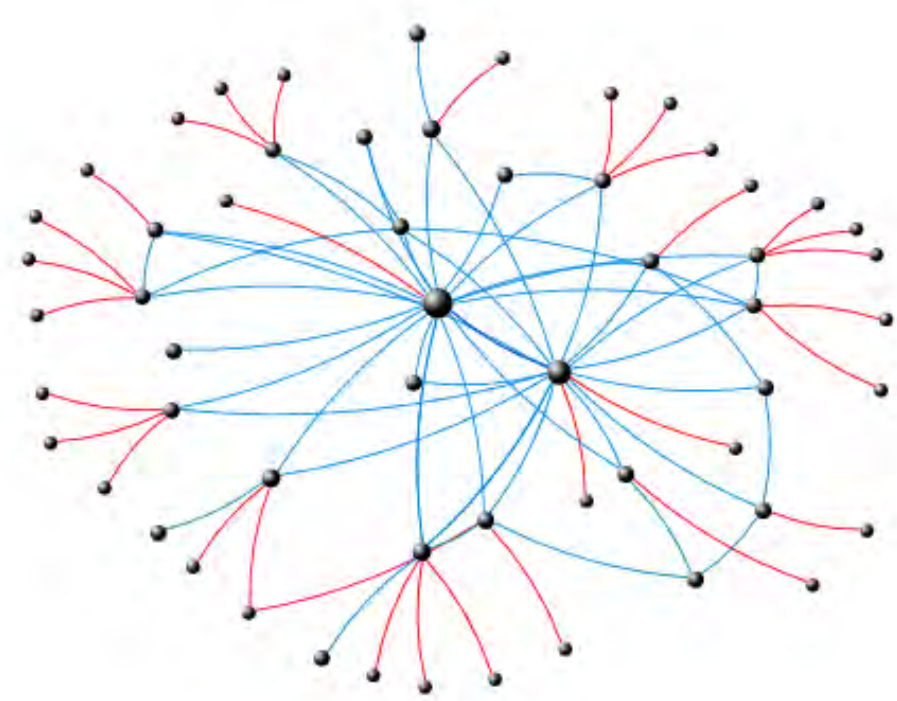


### RESULTS from Regional Center SNA pilot tests

The results below show a few examples of how the Regional IPM Centers are using SNA with their Working Groups

#### Southern IPM Center – **Network Reach & Diversity**

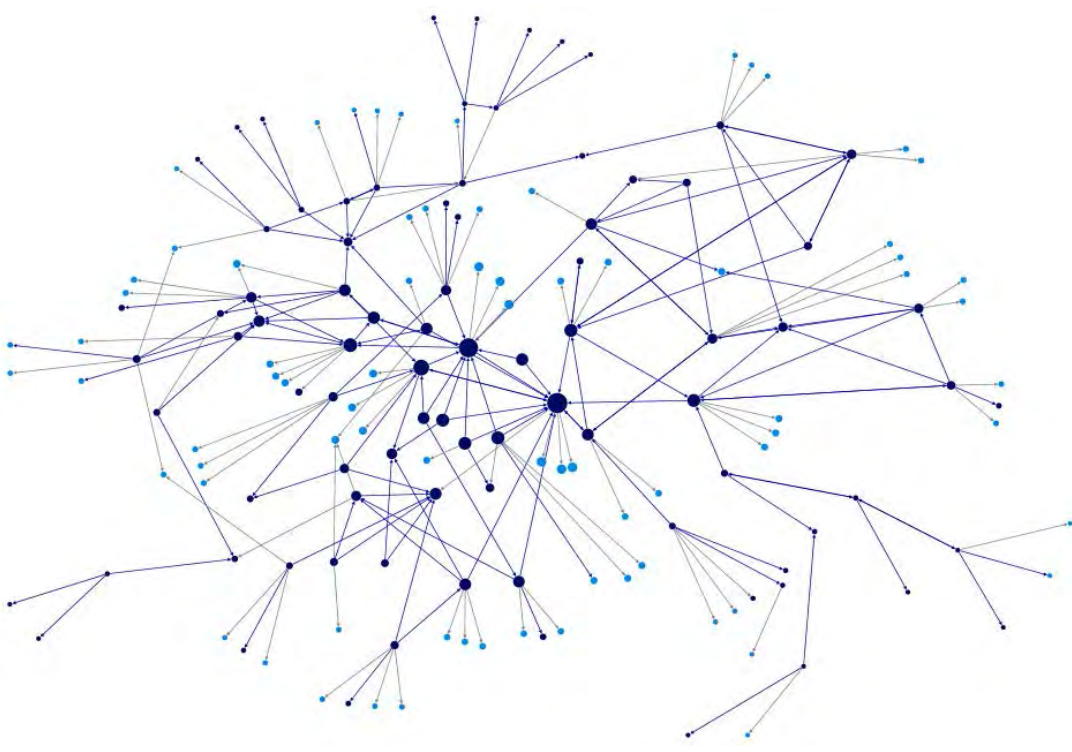
Blue = Communication between Working Group members  
Red = Communication between WG members and non-WG member



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

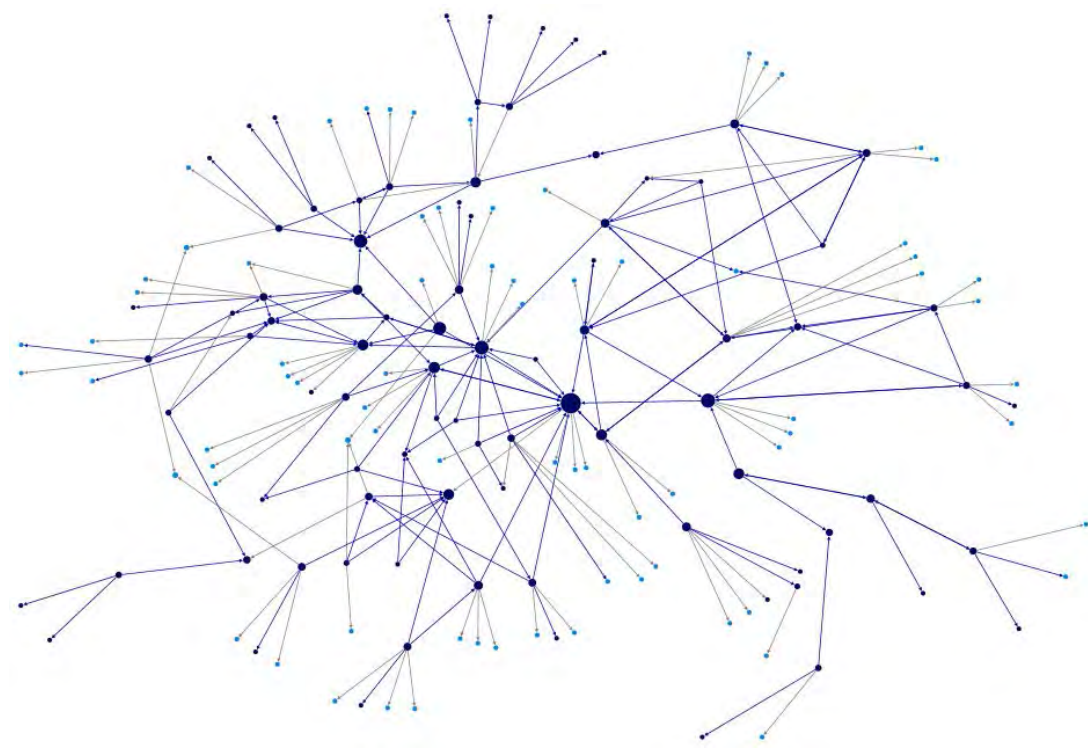
##### Eigenvector Centrality

Importance – who's listened to? Who's connected to those people?



##### Betweenness Centrality

How many shortest paths are you on?

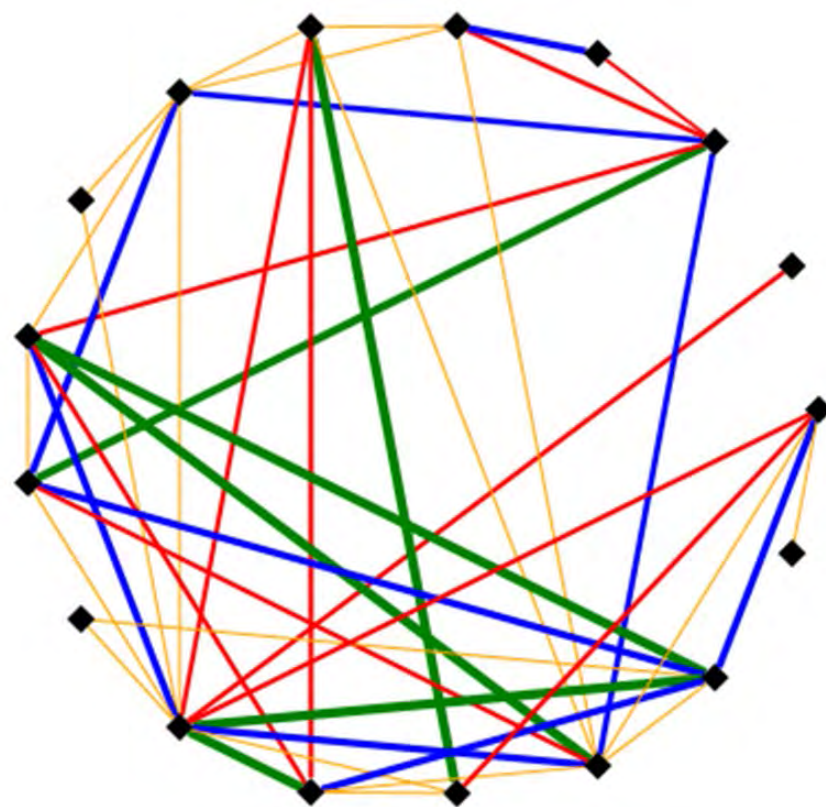


Larger nodes are more influential within the graphs based on the two measures of centrality

#### Northeastern IPM Center – **Changes over time in network density**

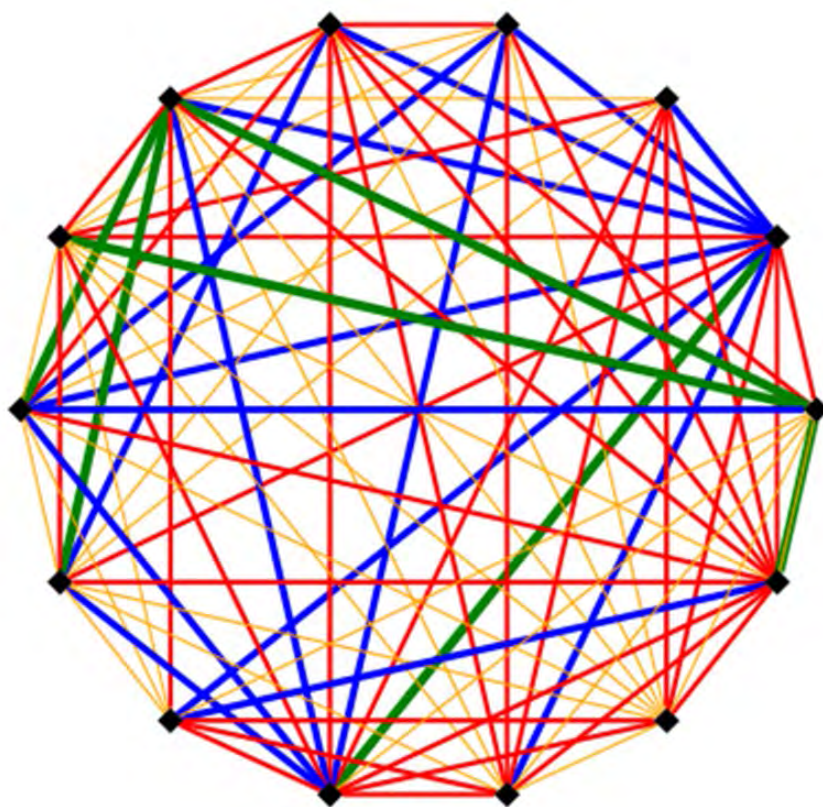
##### Baseline

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



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