

5.2.2 Mapping CTSA Centers (NIH RePORTER Data)

CTSA2005-2009.xls	
Time frame:	2005-2009
Region(s):	Miscellaneous
Topical Area(s):	Clinical and Translational Science
Analysis Type(s):	PI-Institution Network, Co-Authorship Network

Data doesn't always come in easily parsible formats. This study, a search for all recent grants to CTSA centers, requires some advanced searching and data manipulation to prepare the required data. The data comes from the union of NIH RePORTER downloads (see section 4.2.2.2 NIH RePORTER) and NIH ExPORTER data dumps (<http://projectreporter.nih.gov/exporter/>). Each CTSA Center grant was found and matched with its associated publications using a project-specific ID.

The resulting file, which contains all NIH Clinical and Translational Science Awards and their corresponding details from 2005-2009, is saved in an Excel file in 'yoursci2directory/sampleddata/scientometrics/nih/CTSA2005-2009' (if the file is not in the sample data directory it can be downloaded from [2.5 Sample Datasets](#)). The file contains two spreadsheets, one with publications and one with grants. Save each spreadsheet out as grants.csv and publications.csv.

First load grants.csv in the Sci2 Tool using 'File > Load' and 'Standard csv format' in the "Load" pop-up. To view a bimodal network visualizing which main PIs associate with which institution, run 'Data Preparation > Extract Bipartite Network' with the following parameters:

Extract Bipartite Network

Extract a bipartite network from two columns in the table. If the column values may list multiple entries, enter the special text which delimits them.

First column: PI(s) Name

Second column: Organization Name

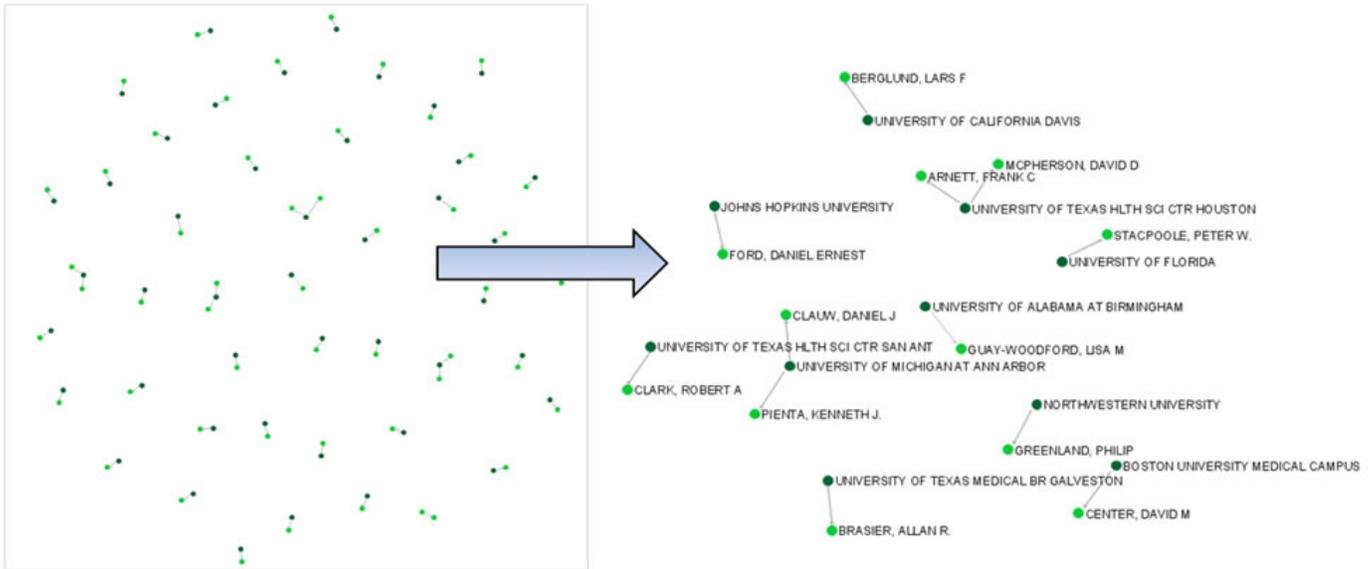
Text Delimiter: |

Aggregate Function File: C:/Documents and Settings/dapolley/Desktop/sci2-N-1.0.0.201205240118NGT-win32.win32.x86

Buttons: OK, Cancel

The resulting network can be visualized in GUESS and laid out using GEM, see Figure 5.26

- Institutions
- PI



The network can also be visualized with the Bipartite-specific visualization. Run '*Visualization > Networks > Bipartite Network Graph*' with the following parameters:

Bipartite Network Graph ✕

Takes tabular data and generates a PostScript for a Bipartite Network Graph.

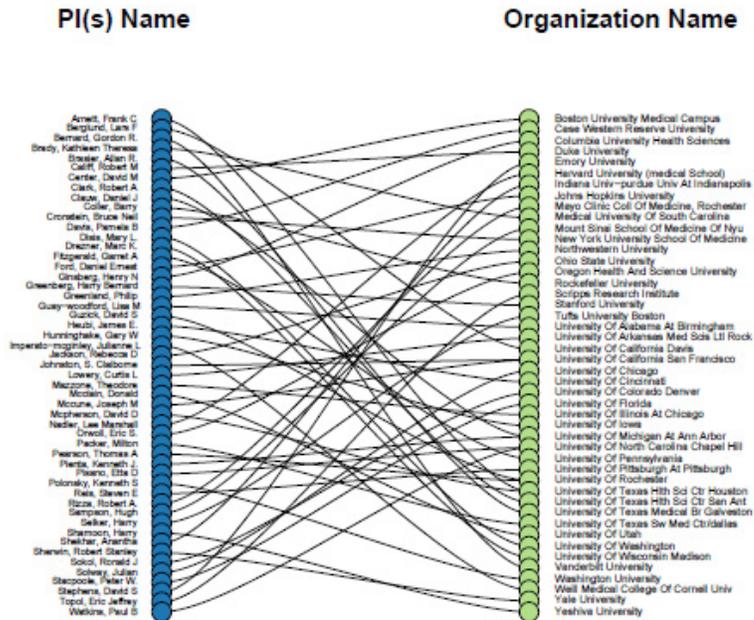
Subtitle	Generated from Bipartite network from PI(s) Name and Organization Name	⬇
Left side node type	PI(s) Name	⬇
Node size	No node weight	⬇
Left side node ordering	Label, ascending	⬇
Right side node ordering	Label, ascending	⬇
Edge weight	No edge weight	⬇
Title for left column (blank for default)		⬇
Title for right column (blank for default)		⬇
<input type="checkbox"/> Simplified Layout?		⬇

OK
Cancel

Sci2 will generate a visualization titled "Bipartite Network Graph PS" in the Data Manager. This network visualization can be saved as a PostScript file and the resulting visualization will look like this:

Network Visualization

Generated from Bipartite network from PI(s) Name and Organization Name
 June 26, 2012 | 10:59 AM EDT



Legend

Sorted by
 Left side:
 Alphabetical
 Right side:
 Alphabetical

How To Read This Map

This *bipartite network* shows two record types and their interconnections. Each record is represented by a labeled circle that is size coded by a numerical attribute value. Records of each type are vertically aligned and sorted, e.g., by node size or alphabetically. Links between records of different type may be weighted as represented by line thickness.

CNS (cns.iu.edu)

Figure 5.26: Bimodal institution-PI network for CTSA Centers.

Now load *publications.csv* as a standard csv and create a co-authorship network by running '*Data Preparation > Extract Co-Occurrence Network*' with text delimiter set to ";" ". The parameter for Column Name should be set to "author." The resulting co-authorship network has 8,668 nodes, 26 isolates, and 50,129 edges (see Figures 5.27 and 5.28).

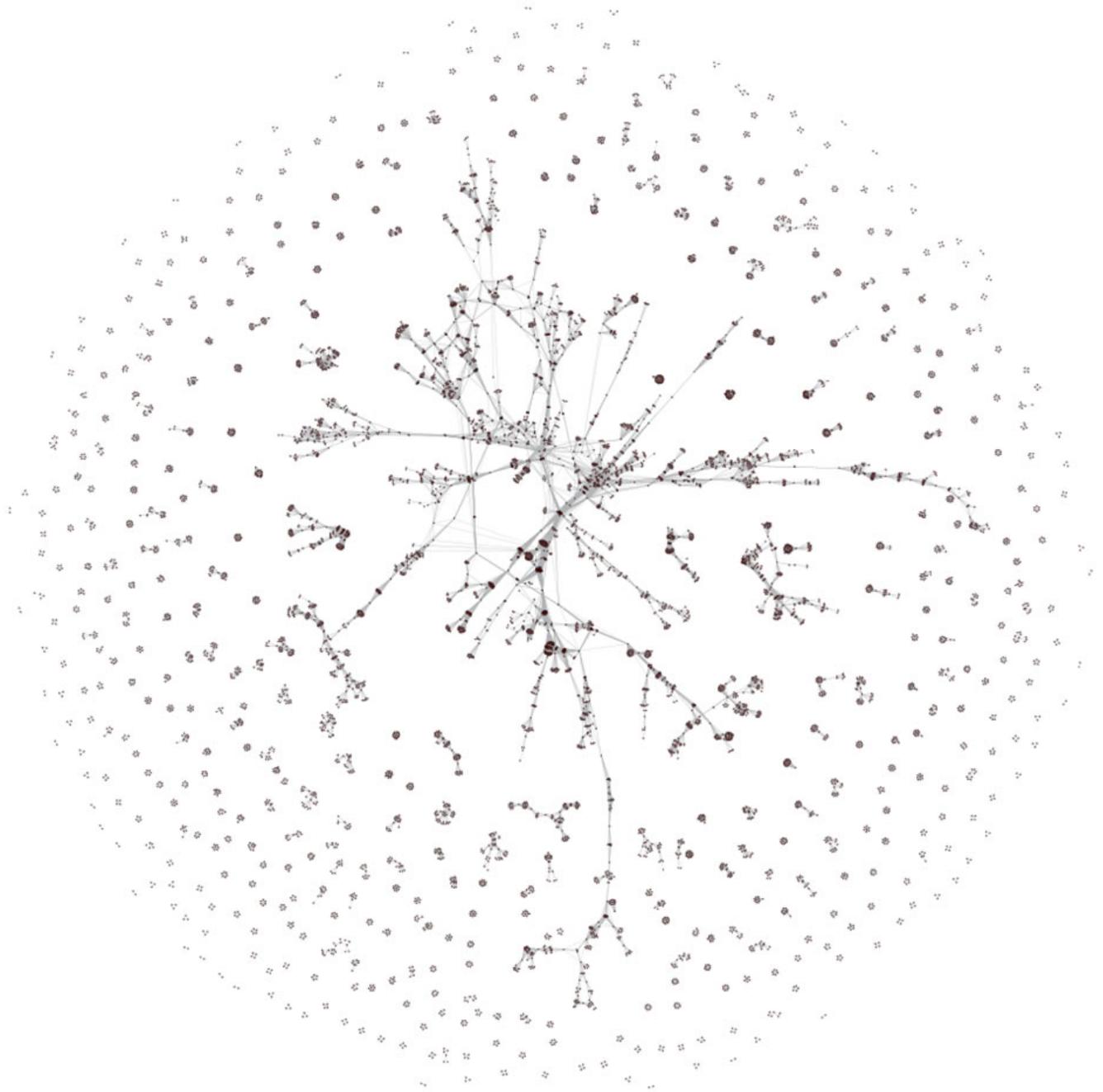


Figure 5.27: Co-authorship network of CTSA Center publications

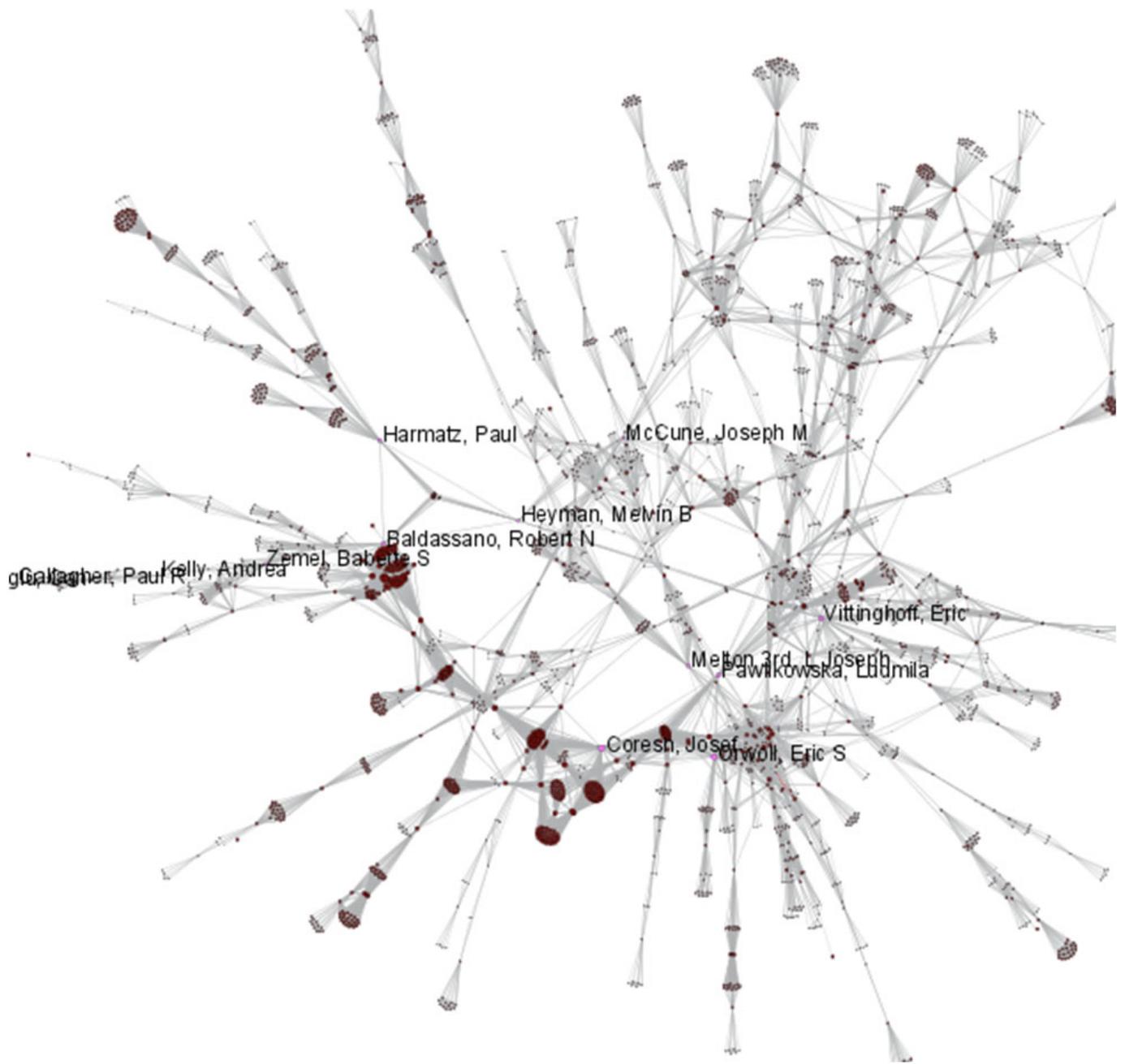


Figure 5.28: Largest connected component of CTSA Center publication co-authorship network

To see the log file from this workflow save the [5.2.2 Mapping CTSA Centers \(NIH RePORTER Data\)](#) log file.