



# Using a Social Network Analysis to Inform Library Communication Patterns within the Harold B. Lee Library

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# Library Description

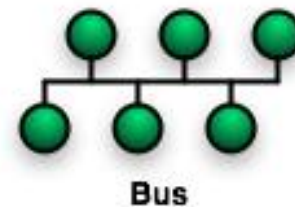
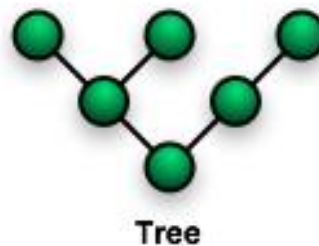
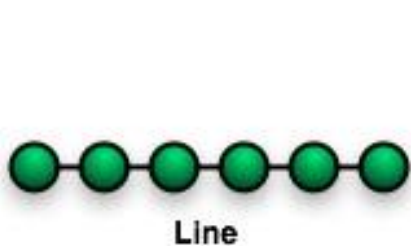
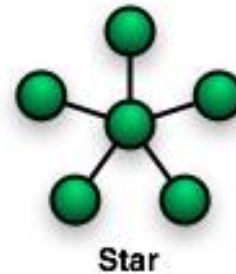
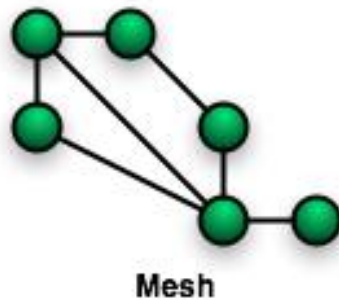
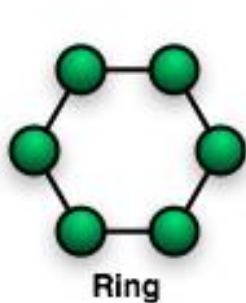


- 33,000 faculty, undergraduate & graduate students
- 160 full- & part-time, non-student library employees
- Six divisions
  - Administration
  - Library Information Technology
  - Special Collections
  - Administrative Services
  - Public Services
  - Technical Services



# Considerations

- Communication Levels
- Complexity
- Modalities





# Method

- Self-reporting survey
  - all FT & PT, non-student employees
  - reminders to non-responders
- Reported level of communication with others
- Three-weeks completion time frame
- Communication Unit = one-way communication between 2 people
- Levels:
  - A = No contact (No communication with person)
  - B = As needed (an immediate or short-term interaction)
  - C = Minimal (simple communication i.e., monthly newsletter)
  - D = Moderate (medium level interaction)
  - E = Strong (reoccurring important interaction)
  - F = Deep (intense, complex communication).



# Method: Categories

## **Cohesion**

- Amount & type of relationships among employees within each division & department

## **Structural Equivalence**

- Percent of identical and different Communication Units in division

## **Prominence**

- Percent of total possible pathways available in a division

## **Obscurity**

- Percent of employees in each division indicating no contact with others

## **Brokerage**

- Most common communication level used within each division and between other divisions



# Findings: Response Rate

Division	Total Employees	Number of Participants	Participation Rate
Administration	8	6	75%
Administrative Services	10	9	90%
Library Information Technology	20	17	85%
Public Services	52	38	73%
Special Collections	28	18	64%
Technical Services	49	37	76%
<b>Total</b>	<b>167</b>	<b>125</b>	<b>75%</b>

Desired Response rate of 80% or better.



# Findings: Cohesion

## Amount & type of relationships

- Smaller Units\* have higher cohesion on all levels
  - Administration 88%
  - Administrative Services 97%
  - LIT 94%
- Larger Units have lower cohesion
  - Cataloging & Metadata (30 employees)
  - Materials Acquisitions (18 employees)
- Dispersed Units have lower cohesion

\* Units = departments &/or divisions



# Findings: Structural Equivalence

## Identical & Different Communication Units

- Identifies if directionality of communications is uniform
  - B = uniform; D = not
- Administrative Services & Administration largest difference
  - Newsletters with no response
- Needs to have individual review to determine appropriate levels
- May use personal communication genealogy

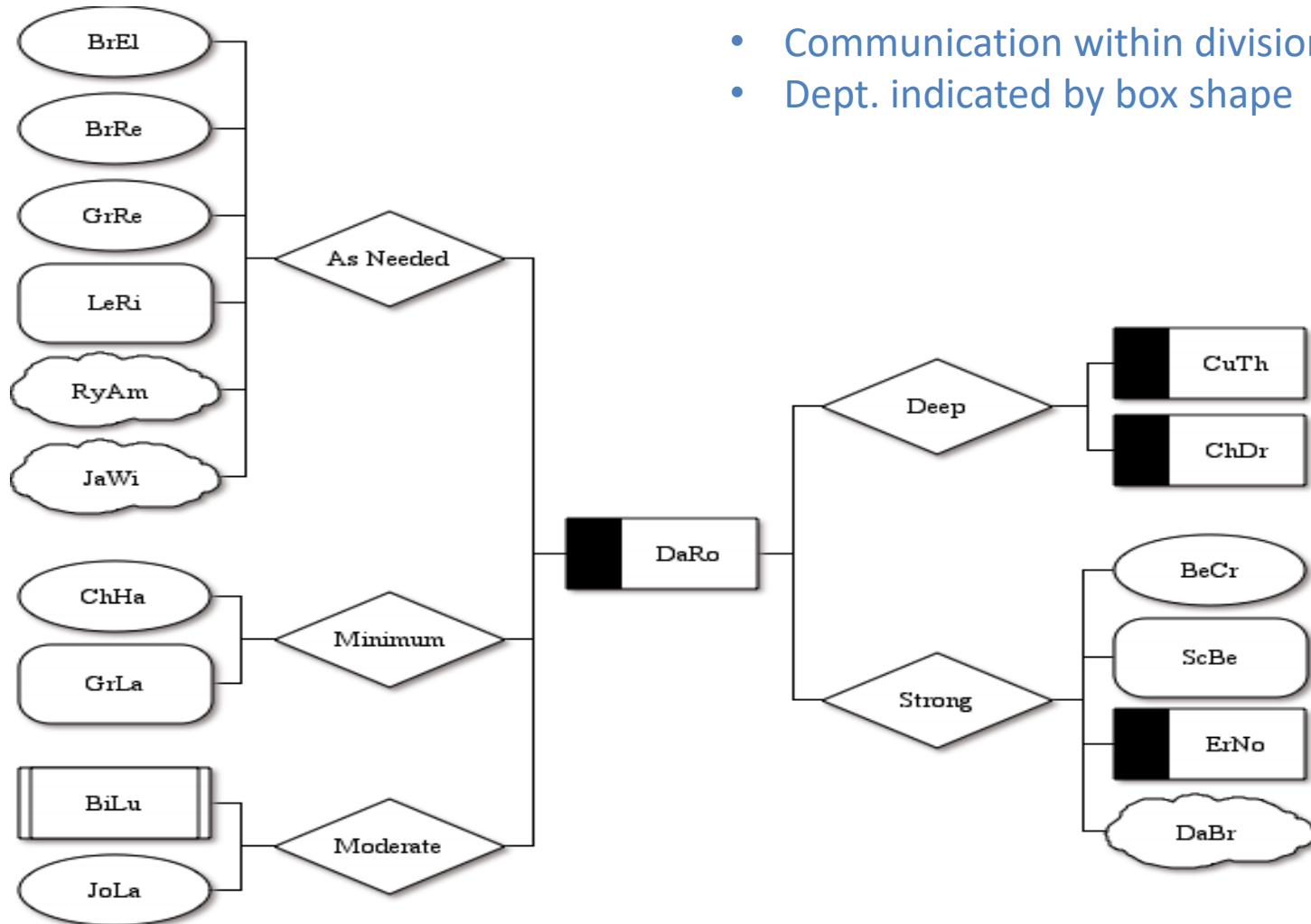
Library Employee	Z To Others	Z From Others
A	Strong	Deep
B	Deep	Deep
C	As Needed	Moderate
D	Minimal	No Contact
E	Moderate	Moderate
F	Minimal	Minimal
G	Minimal	No Contact
H	Moderate	Strong
I	Minimal	As Needed
J	Moderate	Deep
K	Minimal	Moderate





# Findings: Personal Communication Genealogy

- Communication within division
- Dept. indicated by box shape

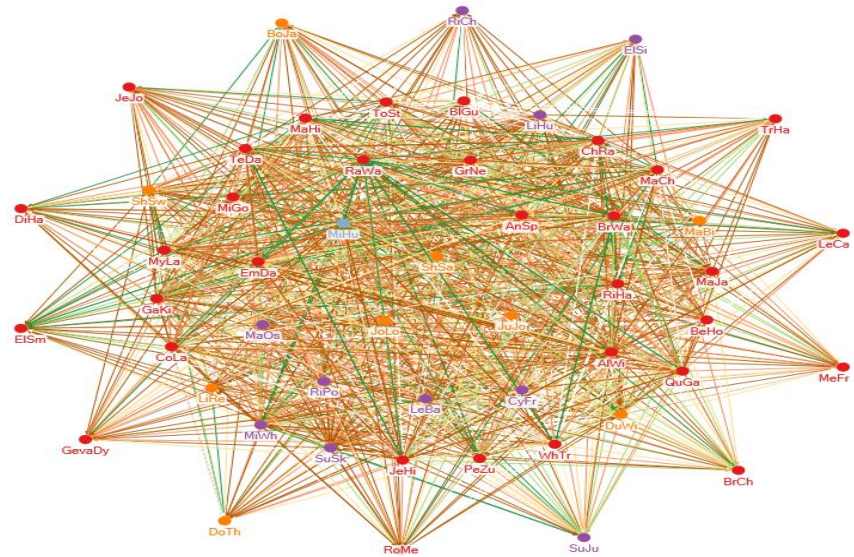




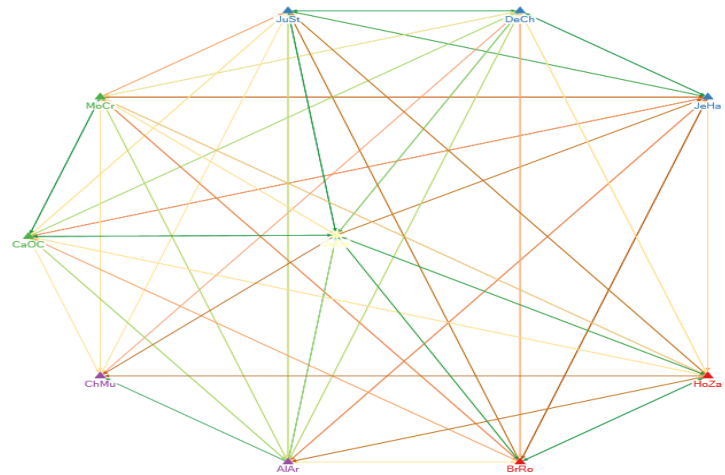
# Findings: Prominence

## Possible Communication Pathways

- Potential pathways to use for communication
- Ranges from 48 - 100%
  - Somewhat misleading
  - 48% of 870 = 418
  - 100% of 90 = 90
- Need to examine:
  - Obscurity
  - Individual patterns



Social media network connections



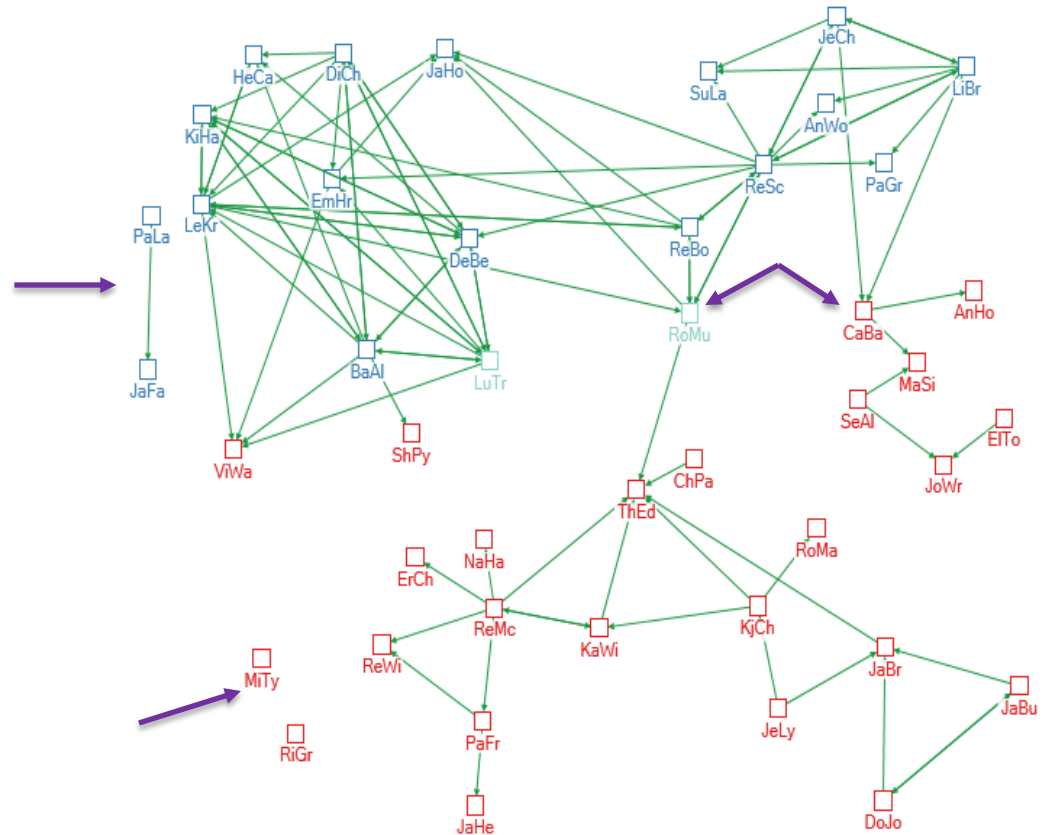
Created with NodeXL Basic (<http://nodexl.codeplex.com>) from the Social Media Research Foundation (<http://www.smfoundation.org>)



# Findings: Obscurity

## No contact with Others

- Hinders communication, innovation & problem solving
- Most are:
  - single or small groups
  - located on different floor or area
  - between employees in different divisions or departments
  - Arrows indicate obscurities or bottlenecks



- Obscurity on one level mitigated by connections on other levels



# Findings: Brokerage

## Most Common Communication Level in Division

- Contact within divisions:
  - no contact (1)      deep (1)
  - as needed (2)      moderate (2)
- Contact outside of home division
  - 23.5 / 30 (78%) are “no contact” (one tie)
  - 60% of these involve more than half of division employees
- Administration unique as within and outside division communication is “as needed”



# Conclusion

- Overall communication in library is strong
  - Occurs on multiple levels
  - Has multiple pathways
  - Contact within most divisions & departments is solid
- Communication between divisions is weak
- Individuals need to review communication genealogy to determine if at appropriate levels
- Considerations:
  - making larger departments smaller
  - Co-locating employees for better contact
  - Having activities/opportunities to get to know or work with others outside of division/department



# Limitations

- Low response rate (less than 80% as a whole)
  - 3 divisions were within 7%
  - 1 division was less than 2/3
- Analysis was single view at single point in time
  - Patterns change as job duties & personnel change
- Time frame affects ratings
  - Week, month, semester, year
- Modality may affect patterns
  - We tried to consider all but just using one or two may change
- Accuracy of individual memory



# Thank you & Questions

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*In God we trust. Everyone else needs to bring data!*