

# UCD4IDS

# Social Network Analysis

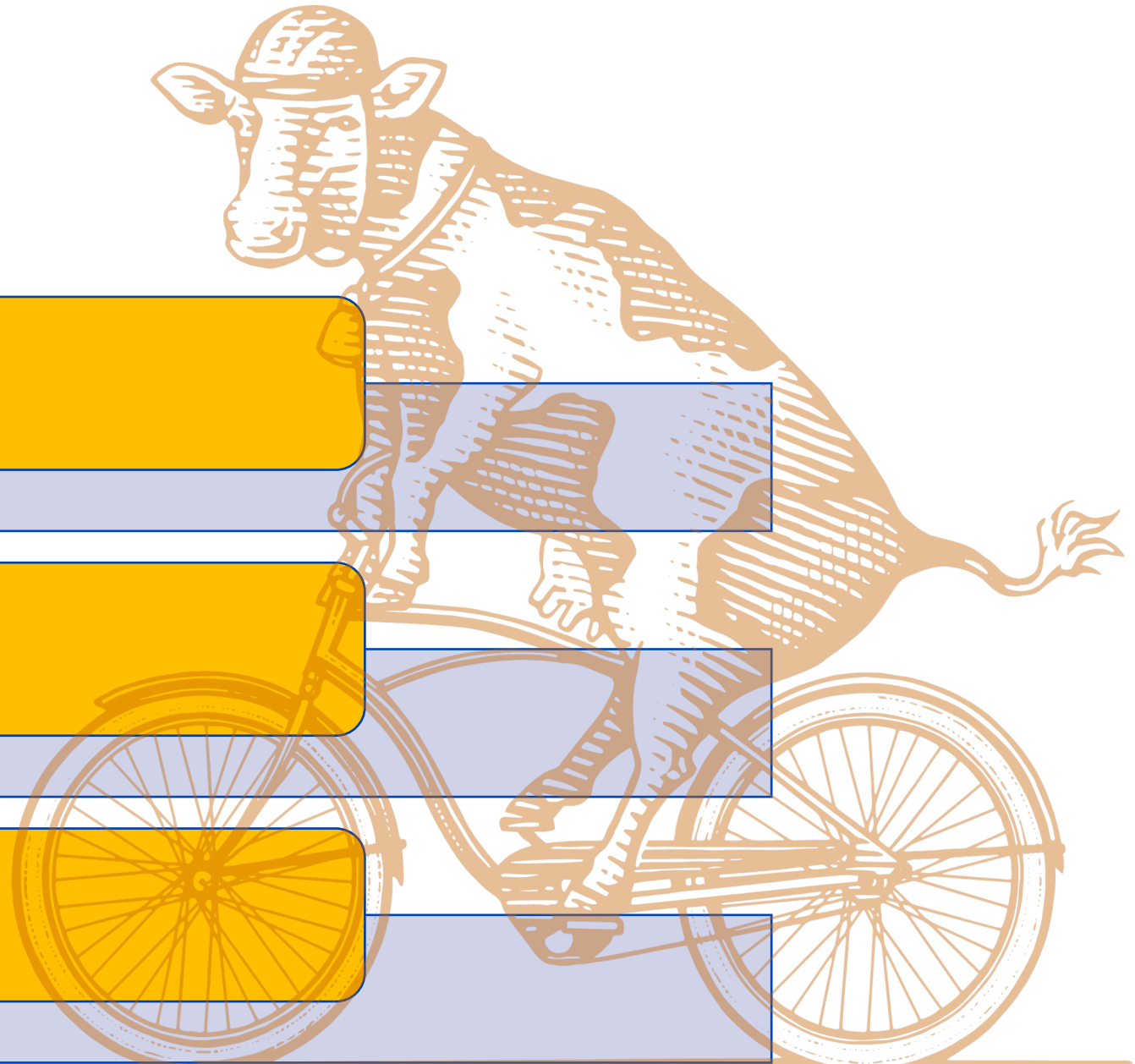
Institute for Social Research

# Goals

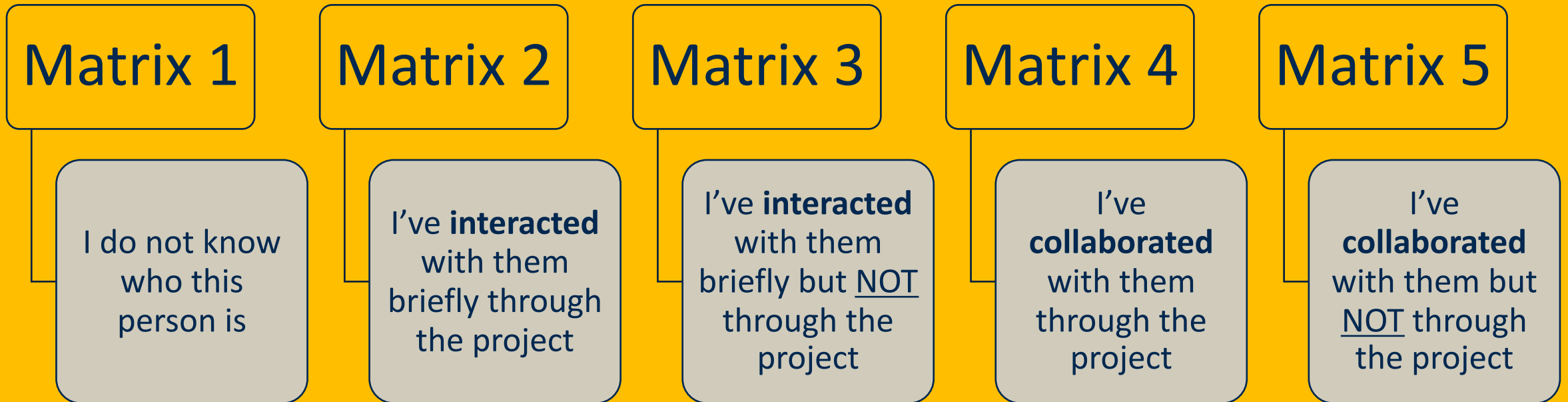
Preliminary Findings

Social Network Maps

Questions



# Matrices



A "**brief interaction**" is defined as a short discussion or interaction

"**Collaboration**" is defined as working together to accomplish shared goals

# Network Density

Density is the measurement of the proportion of actual ties over the total possible ties in a network

An indication of how well the network is connected, informs the speed in which information or resources diffuse among the nodes

**Table XX.** N27 Overall Density Scores

	Density	Number of Ties	Standard Deviation	Average Degree
Matrix 1	0.446	313	0.497	11.593
Matrix 2	0.111	78	0.314	2.889
Matrix 3	0.323	227	0.468	8.407
Matrix 4	0.033	23	0.178	0.852
Matrix 5	0.038	27	0.192	1

Note: Matrix 1 - I do not know who this is; Matrix 2 - I've interacted with them briefly through the UCD4IDS program; Matrix 3 - I've interacted with them briefly but not through the UCD4IDS program; Matrix 4 - I've collaborated with them through the UCD4IDS program; Matrix 5 - I've collaborated with them but not through the UCD4IDS program.

# Reciprocity

Reciprocity is the measurement of reciprocal edges

**Table XX.** N27 Overall Reciprocity

	N27 Matrix 1	N27 Matrix 2	N27 Matrix 3	N27 Matrix 4	N27 Matrix 5
Recip Arcs	218	30	116	8	14
Unrecip Arcs	95	48	111	15	13
All Arcs	313	78	227	23	27
Arc Reciprocity	0.696	0.385	0.511	0.348	0.519
Sym Dyads	109	15	58	4	7
Asym Dyads	95	48	111	15	13
All Dyads	204	63	169	19	20
Dyad Reciprocity	0.534	0.238	0.343	0.211	0.350
Hybrid	0.534	0.238	0.343	0.211	0.350

# Homophily

Homophily is the measure of in & out group preference (birds of the same feather, flock together).

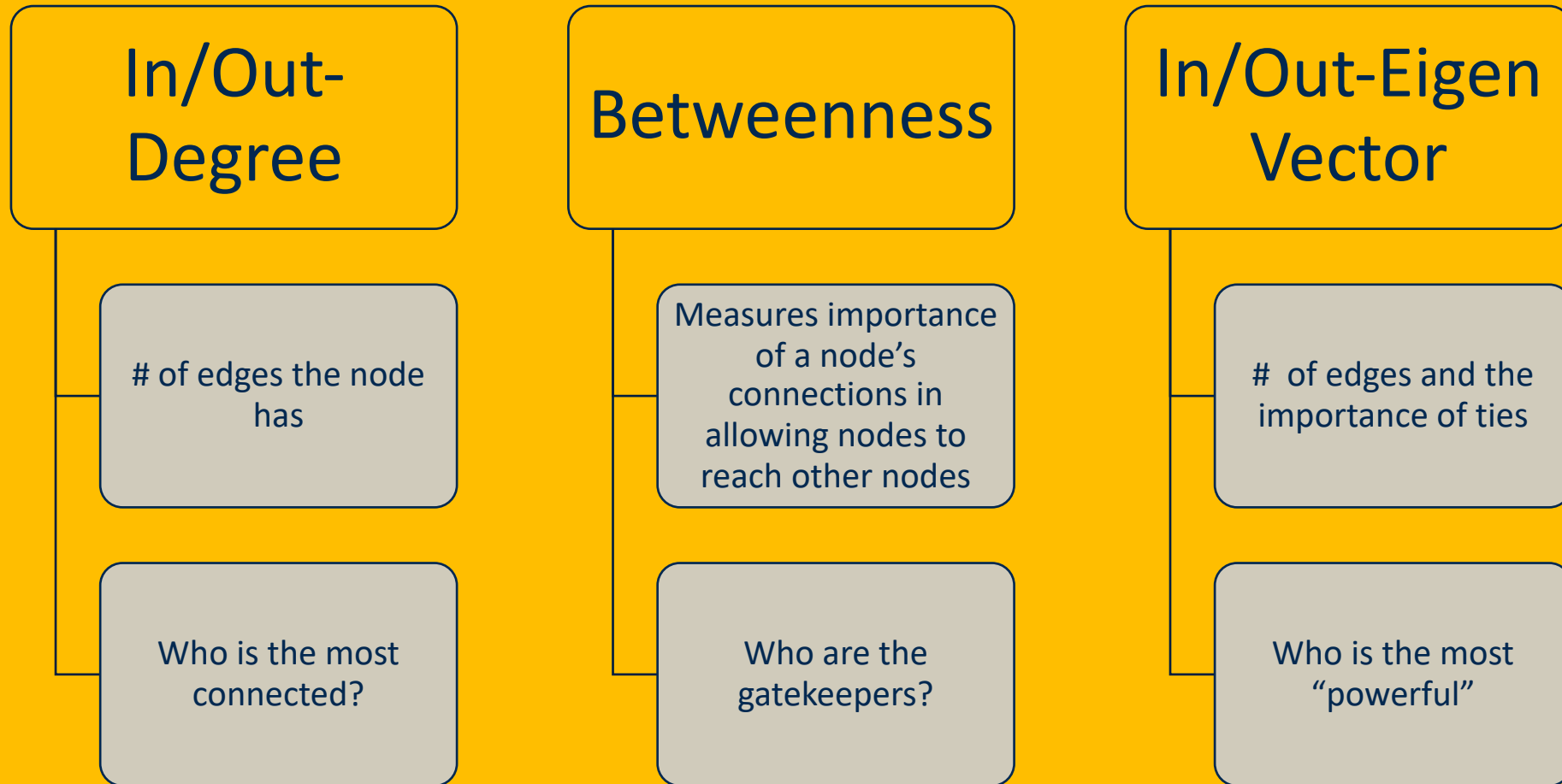
-1 indicates complete homophily, 1 indicates complete heterophily, 0 indicates an equal # of same and different types of ties

**Table XX.** Whole Network Homophily (EI Index)

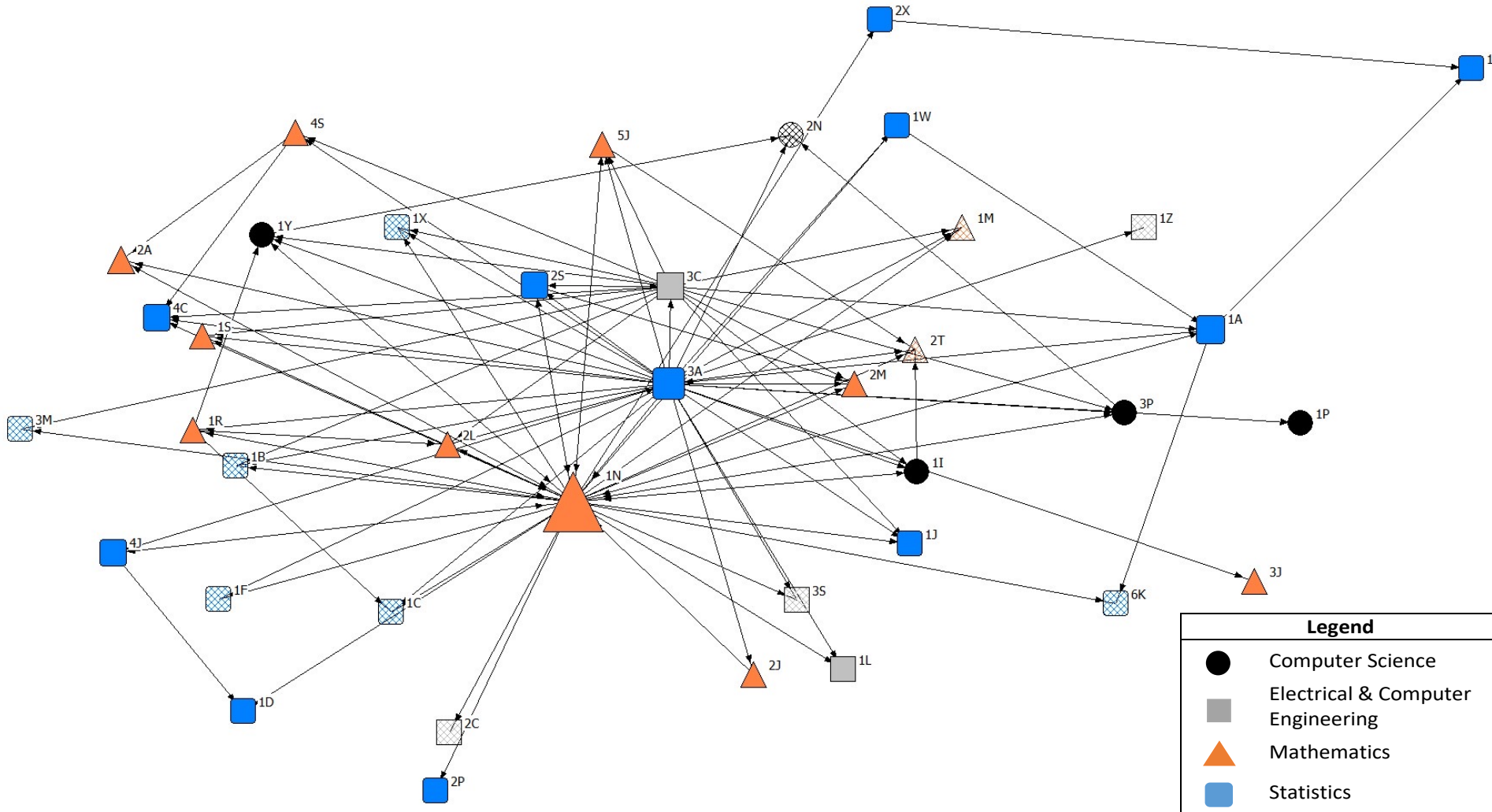
N27 Matrix 1	0.719
N27 Matrix 2	0.359
N27 Matrix 3	0.119
N27 Matrix 4	-0.217
N27 Matrix 5	-0.407

Data shows that while interactions both within UCD4IDS and outside of UCD4IDS have a stronger tendency to work with people are from different departments, collaborations demonstrate the opposite pattern in which collaborations have a stronger tendency to occur with faculty members of the same department.

# Node Centrality Measures & Social Network Mapping



# Matrix 2: Interaction through UCD4IDs



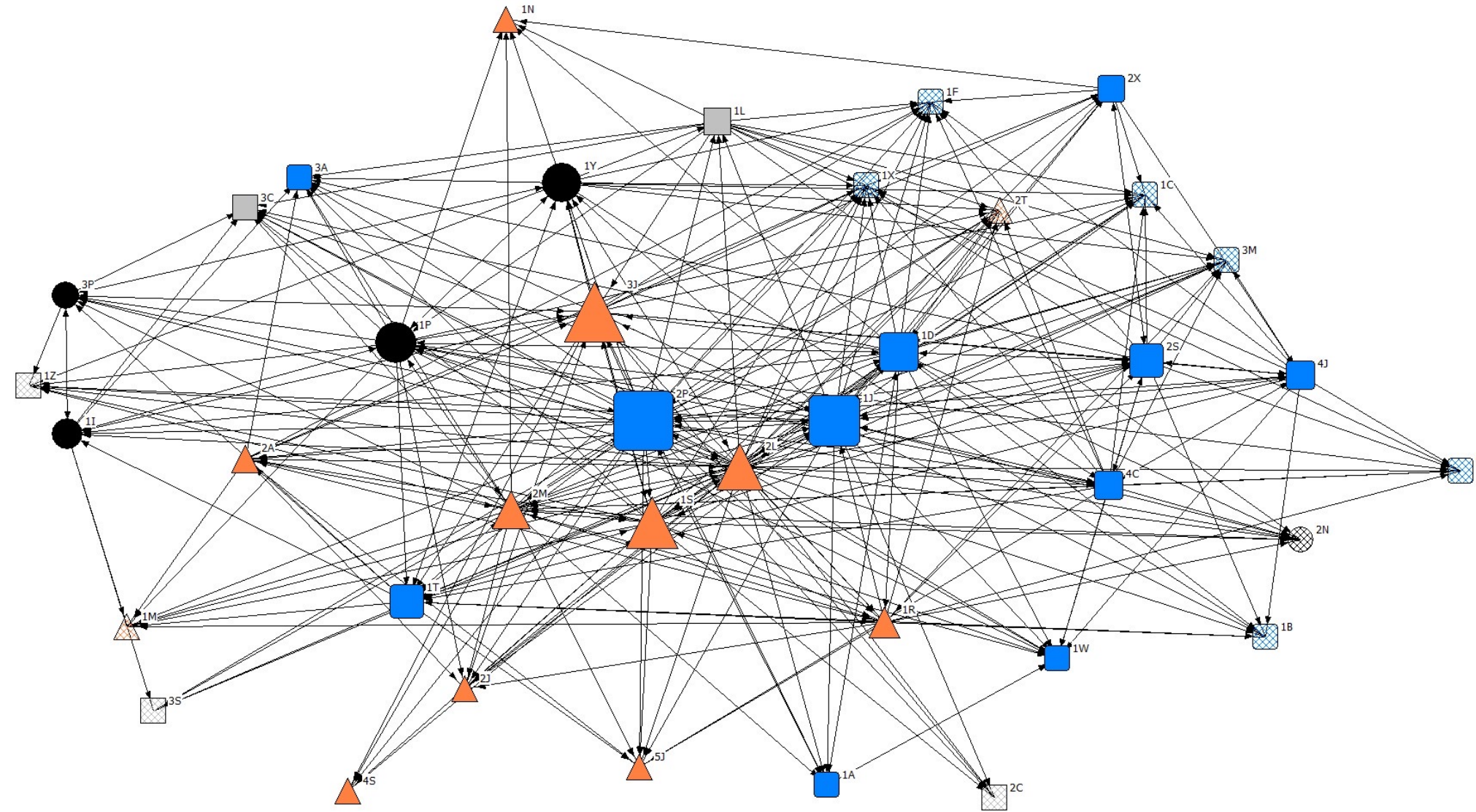
**Table XX.** Node level measurements of centralization

	Out Degree	In Degree	Out Eigen Vector	In Eigen Vector
1A	3	3	0.26	0.20
2A	1	3	0.11	0.17
3A	21	2	0.61	0.09
3C	12	2	0.30	0.06
4C	1	4	0.11	0.19
1D	0	2	0.00	0.18
1I	1	3	0.11	0.18
1J	0	3	0.00	0.18
2J	1	1	0.11	0.02
3J	0	1	0.00	0.02
4J	3	2	0.26	0.16
5J	1	3	0.11	0.18
1L	0	2	0.00	0.16
2L	1	4	0.11	0.22
2M	0	4	0.00	0.22
1N	19	15	0.45	0.60
1P	0	1	0.00	0.02
2P	0	1	0.00	0.14
3P	1	3	0.11	0.18
1R	3	2	0.16	0.16
1S	1	3	0.11	0.18
2S	3	3	0.18	0.18
4S	2	2	0.05	0.04
1T	0	2	0.00	0.08
1W	2	2	0.17	0.16
2X	1	1	0.00	0.14
1Y	1	4	0.11	0.22

Please note: shapes that are not filled in represent respondents who did not answer the survey.



# Matrix 3: Interaction NOT through UCD4IDS



**Table XX.** Node level measurements of cen

	Out Degree	In Degree	Out Eigen Vector
1A	3	6	0.07
2A	8	7	0.15
3A	0	10	0.00
3C	0	10	0.00
4C	10	7	0.23
1D	15	9	0.26
1I	5	7	0.05
1J	20	11	0.35
2J	1	9	0.02
3J	9	11	0.13
4J	6	7	0.15
5J	0	9	0.00
1L	6	4	0.06
2L	24	9	0.39
2M	18	9	0.29
1N	0	6	0.00
1P	15	9	0.24
2P	24	10	0.38
3P	4	8	0.04
1R	10	8	0.22
1S	16	11	0.27
2S	10	10	0.22
4S	1	5	0.03
1T	9	10	0.18
1W	0	11	0.00
2X	5	6	0.11
1Y	8	8	0.17



# Matrix 5: Collaboration NOT through UCDAIDS

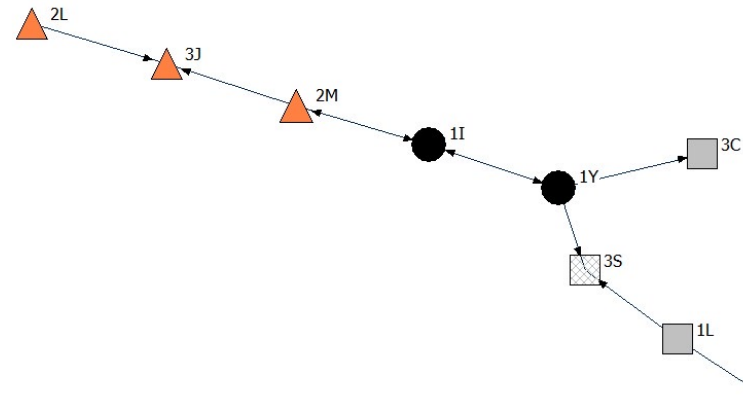
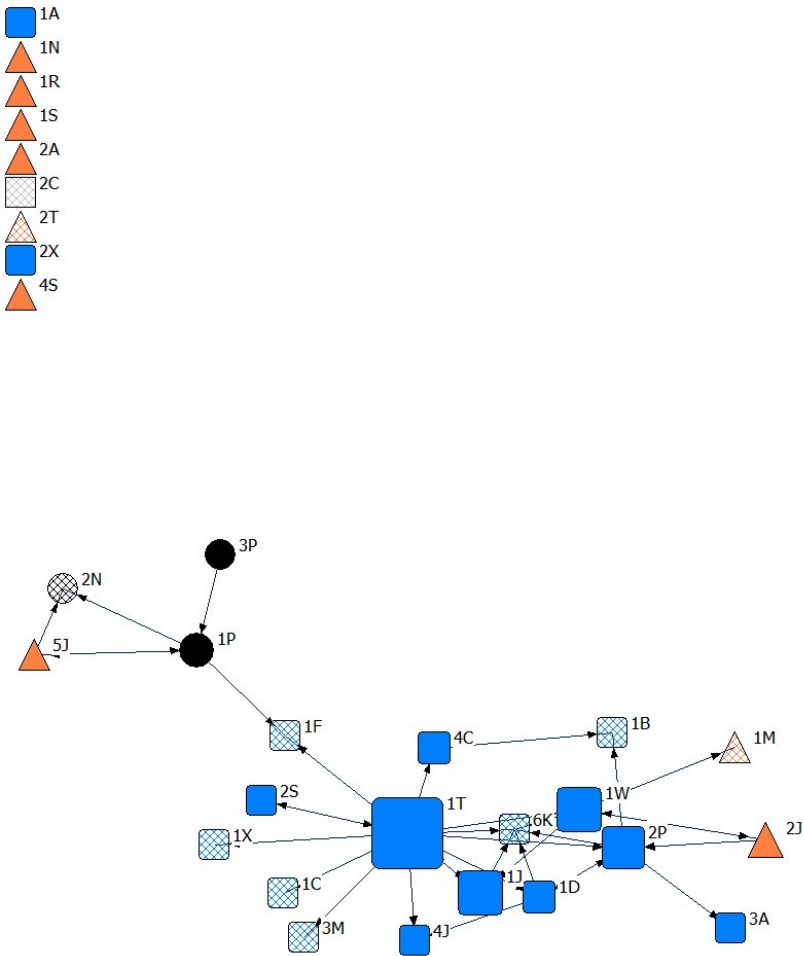
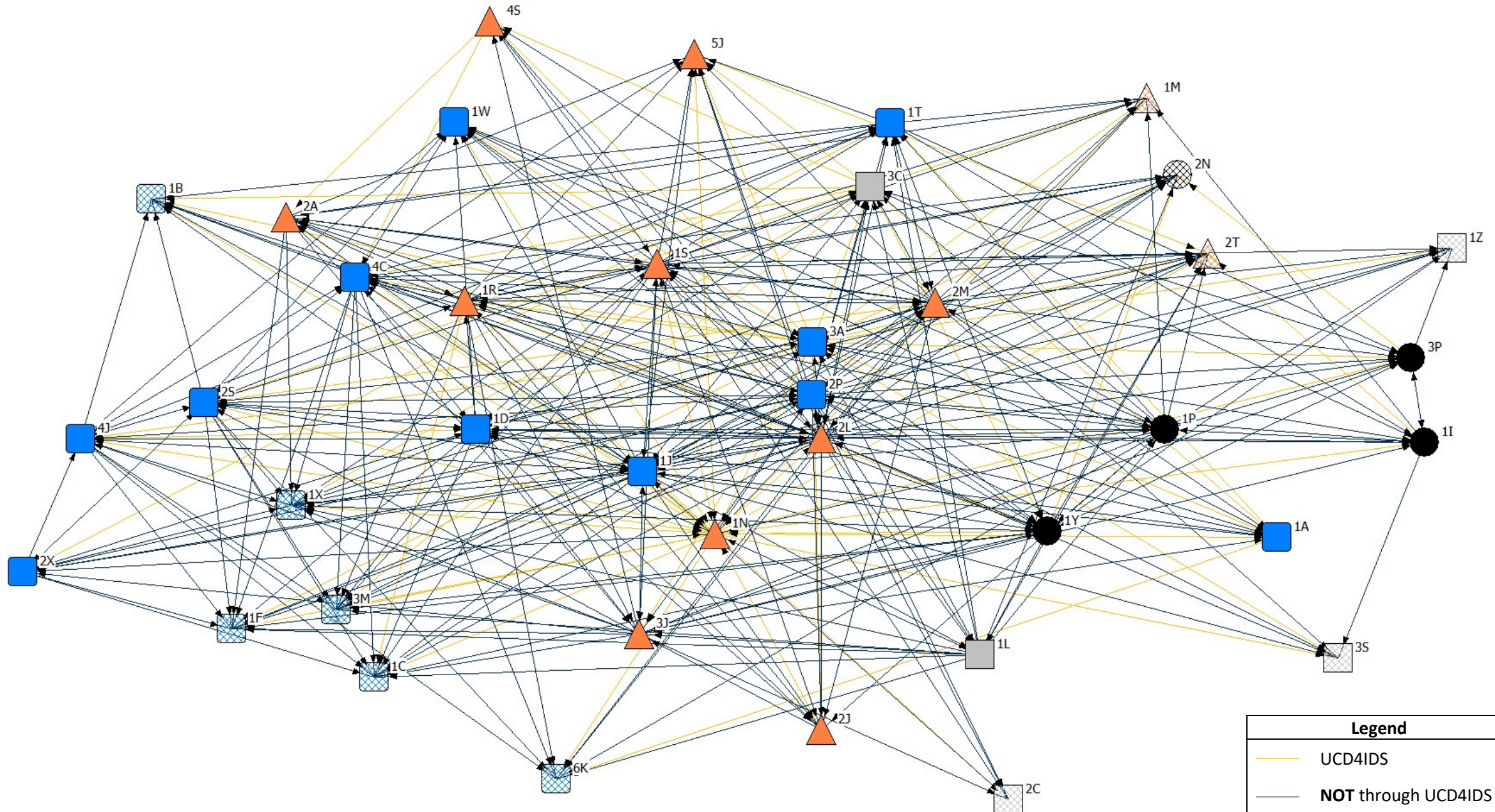


Table XX. Node level measurements of centralization for Matrix 5.

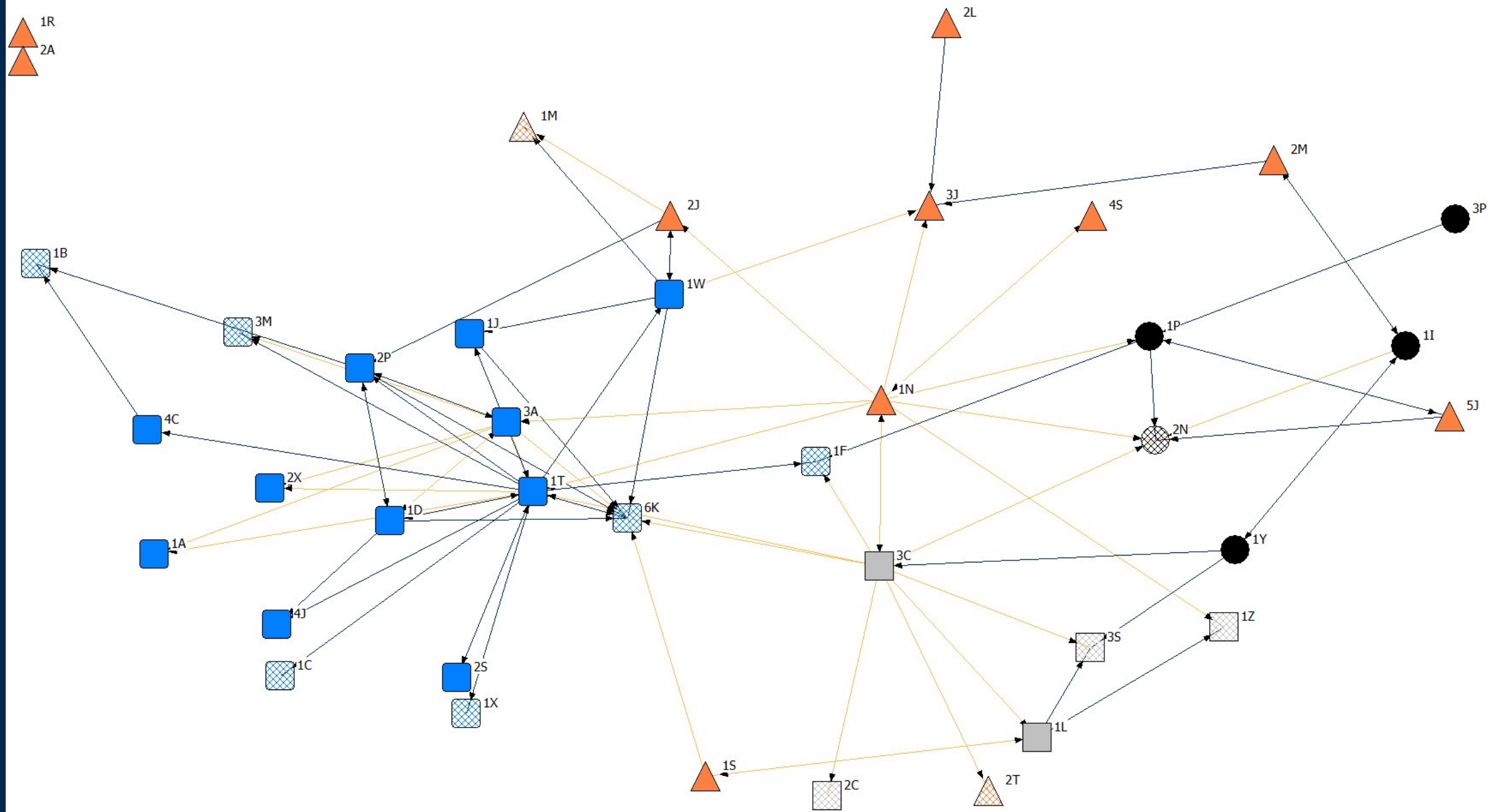
	Out Degree	In Degree	Out Eigen Vector	In Eigen Vector	Betweenness
1A	0	0	0.00	0.00	0.00
2A	0	0	0.00	0.00	0.00
3A	0	1	0.00	0.30	0.00
3C	0	1	0.00	0.00	0.00
4C	0	1	0.00	0.16	0.00
1D	2	2	0.00	0.45	2.00
1I	2	2	0.00	0.00	4.00
1J	1	2	0.41	0.30	7.50
2J	2	1	0.22	0.14	2.50
3J	0	2	0.00	0.00	0.00
4J	0	2	0.00	0.42	0.00
5J	1	1	0.00	0.00	0.00
1L	0	0	0.00	0.00	0.00
2L	1	0	0.00	0.00	0.00
2M	2	1	0.00	0.00	2.00
1N	0	0	0.00	0.00	0.00
1P	1	2	0.00	0.00	1.00
2P	2	3	0.00	0.50	8.50
3P	1	0	0.00	0.00	0.00
1R	0	0	0.00	0.00	0.00
1S	0	0	0.00	0.00	0.00
2S	1	1	0.41	0.16	0.00
4S	0	0	0.00	0.00	0.00
1T	7	2	0.70	0.27	21.50
1W	2	2	0.37	0.24	7.00
2X	0	0	0.00	0.00	0.00
1Y	2	1	0.00	0.00	2.00



# Comparing Interactions (M2 vs M3)



# Comparing Collaborations (M4 vs M5)



# Questions

