

Identity (net)working to Support Under-represented STEM Students

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The first aspect of the data we've analyzed has included respondents' answers to the question, 'With whom do you discuss issues related to physics research or equity?'. Answers to these questions were used to construct sociograms and also to calculate betweenness. Individuals with the highest betweenness measures tend to be in positions enabling them to access and share a diversity of perspectives and connections. These individuals also tend to take on brokering positions between those who are external to the group and those who are not. This brokering action introduces resources or knowledge into the network and has the potential to disrupt levels of hierarchy or group cohesion.

From the results listed in Table 1 below it is evident that an administrator (e80) and a faculty member (e77) hold the highest betweenness positions enabling them to share and access a diversity of connections and perspectives.

	Ego	Normalized Freeman Betweenness
Graduate student	e12	2.373
Graduate student	e29	1.970
Graduate student	e50	2.191
Faculty	e54	0.008
Graduate student	e59	2.228
Faculty	e73	0.185
Faculty	e77	4.516
Administrator	e80 (Cassie)	3.492
Undergraduate student	e83	0.000
Graduate student	e84	0.169
Mean		0.217
Standard Deviation		0.781

Table 1: Normalized Betweenness

The other high measure of betweenness (in addition to administrator, e80) was held by a faculty member, e77. A graduate student (pseudonym, Renée) mentioned faculty member e77 as someone who was able to provide her with helpful advice.

Renée

[At] one of our women in physics events I talked to[e77] and she gave me great advice for what I was going through at the time. She was like, 'Don't be a perfectionist. Put out a paper. Just get it done and move on.'

In addition to Renée, other students mentioned faculty member e77 as someone they could go to for various types of advice or to be directed to someone who could provide such advice. The connections between the student Renée and other students and faculty are represented in the sociogram below. In Figure 1, each solid square is called a node and represents a person in Renée's ego network. The nodes are connected by lines called ties. Conversations about physics research or equity are represented by these lines.

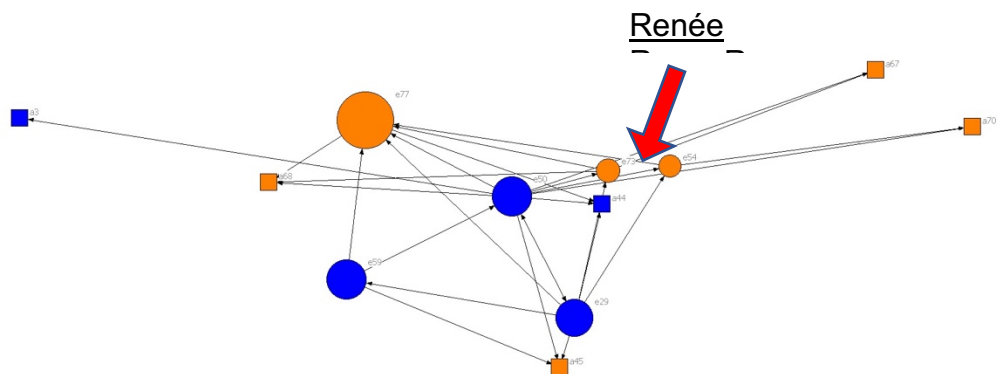


Figure 1: Renée's ego network (Conversations about research and equity)

NOTE: Orange nodes are faculty. Blue nodes are students. The nodes are sized according to betweenness measures.

The largest orange node with the largest betweenness measure is faculty member e77 - to whom Renée has a connection. By having a connection to e77, Renée has access to someone who can provide a bridge between her and other people. This connection has provided Renée with helpful advice as we noted from her interview comment above. An examination of Renée's ego network also reveals that she has more ties to orange nodes (faculty) than to other blue nodes (students). This access to conversations with faculty is a benefit of her participation in the Womens' Physicists Group.