

## SUMMARY

### Mark Schneider, Class of 2008

I had a wonderful experience working for Professor Lauren Cohen on the SRO project. Professor Cohen was very accessible, insightful and open. In each meeting he asked for my input and seemed to genuinely value what I had to say for which I felt very honored. The research project was very cutting edge. The initial SRO description of the project pertained to the Endowment Effect which was discovered by Chicago Professor Richard Thaler, who had been Professor Cohen's advisor when Professor Cohen attended graduate school at the University of Chicago. Professor Cohen presented me with a series of background readings regarding the Endowment Effect in May and we first met formally in the first week of June.

In our first meeting however, Professor Cohen offered me the option of staying with the Endowment Effect research or jumping to a different project which I found to be even more fascinating. Professor Cohen, working with two of his colleagues had obtained a database of social networks of major corporations. The data set was very rich and comprehensive. The initial plan was to examine how social network relationships within firms and between firms affected their stock prices.

I opted to switch from the Endowment Effect research to the social networks project. Professor Cohen then presented me with background papers regarding social network theory. Social Network theory, which draws from Graph Theory and Game Theory is a field which generated interests in the 1950's and 60's when Stanley Milgram (who taught at both Harvard and Yale) determined that the average number of links, or degrees between any two people in the world was six. The "six degrees of separation" have become a very fascinating phenomenon in popular culture and spawned further research in this area. Social Network Theory can also be used to measure power and influence for certain agents within a network. The definitive calculations which form the basis of measuring influence in social networks are betweenness centrality measures which were formulated initially by Linton Freeman of Lehigh University in 1977. In the subsequent years more papers testing these betweenness measures and developing alternate forms were published in sociology journals. The idea behind betweenness measures is that people who are centrally located in a network can provide or withhold information, thus placing them in a position of influence. An example used in one of the papers asked the question, "Why did the Medici family in Florence rise to power when there were other families who possessed both greater wealth and more seats in parliament who did not?" The paper argued that the Medici were in a position to issue promissory notes and arrange strategic marriages because of their location amidst other influential families. A measure based on their physical location showed that the Medici had a betweenness Centrality of 0.52, which means that on the shortest path between any two influential Italian families of this period, the Medici family lay on over half of them. In contrast, the Next highest betweenness measure was just over 0.1.

Professor Cohen knew he wanted to use the data set he had to measure influence within firms. But he wasn't initially sure which approach he would take first. I've always believed that economics had the power and potential to quantify and analyze social relationships and influence. I suggested that we look at ties firms have to important Politicians and Media firms. For instance, if Senator Bill Frist sits on your board of directors, does that help in obtaining federal funding or favorable legislation for your firm? Or, if you know top people at the New York Times or Fox News, does that help your firm get a positive spin, which perhaps, in turn boosts stock prices? These were among the questions I recommended to investigate. Professor Cohen decided to move ahead with the media networks approach first, which I had first suggested. So I felt fortunate to have provided the first semi-specific direction for the research. I spent the summer reading up on Betweenness measures and social networks, locating relevant research and journal articles and also developing and modifying certain relevant calculations, clustering, betweenness and others to our specific situation. Once we had a decent notion of how to proceed with the calculations, I helped with the Data collection. I wrote a small program which Professor Cohen had taught me, to collect data. Professor Cohen ultimately found a more efficient way to get the data even faster, so this set of data was not specifically needed. However, I spent the last few weeks of my internship researching all the major media firms as well as going through our spreadsheet of 17,000 firms and determining which firms qualified as media firms and what specific media assets they owned. So essentially I was involved in thoughtful discussions every week, background reading and article searching, calculation development, and data collection.

The overall program I found to be a very rewarding experience. Professor Cohen is an excellent professor to work for and I could not have hoped for a better arrangement. The research remains on-going, though Professor Cohen has assured me that my involvement in the project is complete. He seemed very satisfied with my work and discussions and he was always available for questions and was very accommodating. I think that the SRO program is a wonderful program that Yale offers economics students and I hope it continues for many years to come.