This project consisted of two different investigations. A small portion of the project was devoted to the study of the online social networking site Twitter, and its potential for use in health related issues, while the majority of the project focused on the examination of the development and quality of relationships in online social environments. This portion of the project was a case study of two life-sciences, forum-based websites.

For the smaller aspect of the project, every tweet that contained at least one of five different keywords pertaining to cancer over the span of roughly nine months was collected, along with time and location information associated with each tweet. This data was combined with specific demographic data by state to determine various trends and correlations between the tweets and their respective locations. The results showed some obvious and expected correlations, including the impact of doctors per 100,000 people in a state on the rate of cancer related tweets, but also revealed that the number of cancer incidents in a particular region does not affect the number of tweets relating to that type of incident.

The majority of the project was spent analyzing the establishment of trustful relationships in the life-sciences forums. The posts in the forums were recorded both by their content and if applicable the type of interaction that is observed in the post to another user of the forum. These interactions were recorded by two qualifiers: trust and sentiment. This data was then used to create network maps such as the one seen in Figure 1, as well as for statistical analysis, in order to get a better understanding of how relationships are developed in an online environment. The statistical analysis was done as a case study for a particular forum that dealt with the advancement of the image of women in science. The results of this analysis led to the following conclusions:

- Posting personal information and answering questions leads to receiving trust from other users.
- Users that discussed gender and asked questions were more likely to give out their trust to other users.
- The receiving of trust makes a user more likely to give out their own trust.
- Women were more likely to discuss gender issues resulting in an increase in the giving of trust to other users.
- There are various methods in which a member of a forum can facilitate online discussion, from asking a lot of questions to spur conversation, to answering a lot of questions and being the provider of information.

Figure 1: Network map for sentiment

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