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## ISyE 2028 – Basic Statistical Methods - Fall 2015 Bonus Project: “Big” Data Analytics Proposal (or Final Report)

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Science, technology, engineering, and mathematics fields have always been dominated by men. However, with increasing gender equality and education women have started to enter into these fields more and more each year. As a female engineering student, I find it interesting to see how many women are now following their love for these, come to be known as, STEM topics. In particular, the field of engineering has so many sects that it is hard to believe that more women have stepped up to accelerate these ideas to develop concepts that could change the world. The main topic I am researching delves into the main types of engineering degrees that women are attaining in recent years. This can give insight on what colleges should do in order to attract more females to their departments. The evaluation could help to balance the gender ratio by just opening the idea to change marketing strategies when advertising engineering degrees cross the world and campuses.

I have found a website that breaks down how many degrees were awarded to women by college and degree. There is also data that breaks down this population by ethnicity and as well as compare this statistic to that of the amount of males in the same ethnicity. I can use this data to evaluate the most popular, least popular, and average interesting engineering majors for women.

I plan to create a histogram and box plot in order to see how the data is spread in a broad sense. I will then use the five number summary to look deeper into the data to see within the mean, median, and mode degree and to evaluate the most common and least common ethnicity of these women. I am expecting to see a normal bell curve because this is based on a sample of the world's population in which humans tend to perform in this way. I also tend to think most women will go into biomedical engineering and the aerospace engineering degree will have the least amount of women. As I evaluate this data, I may need to use some statistical skills we

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have yet to develop this semester, so these methods used for evaluation will most likely expand in order to better understand the data and attain a concrete answer as to what exactly is the most attractive engineering major to women in recent years.