August 22, 2003

Dear Professor Isaacson,

I am writing this letter to emphasize the importance of statistical knowledge and how essential it is for an engineer after he/she graduates and is introduced to the "real world" of engineering.

I graduated from ISU in December of 1997 with a degree in Mechanical Engineering, a minor in Psychology, and the confidence of nineteen months of manufacturing co-op experience at various facilities. With my education and experience, I was ready to accept a high paying, rewarding career with a good company. My career and current job is as a Senior Process Engineer for 3M (hopefully on track for my goals mentioned). I have become a cog in the 3M Company machine and have experienced the realization of many early career expectations. I have also made significant observations about "real world" engineering.

One critical observation, which continues to intrigue me, is the methods individuals choose to solve or work through problems, or as they are often phrased, "opportunities for improvement." What I find intriguing is the diverse methods used to make decisions. As a technical employee, I am asked to make decisions everyday. What I base these decisions on becomes more critical as I become more influential as an employee. The results of these decisions also become increasingly scrutinized as my influence and responsibility increases.

The question I ask my co-workers and myself is, "How do we make timely, effective, and successful decisions?" The answer I have finally reached is to use *data* to drive your decisions. Data is the information potentially or readily available, used to make decisions, whether they're right or wrong. Approaches to using this available data in decision making is how *statistics* is essential to me. There are few absolute truths when using data; therefore, statistics becomes vital in understanding what the data is telling you and/or what is really going on with a process. This understanding can be very powerful in making timely, effective, successful, and profitable decisions for a company.

It took me a few years as an engineer to realize the importance of using data in making effective, successful decisions. In that time I've watched a company spend thousands, even millions of dollars on new equipment, equipment changes, process changes, and raw materials (and the list goes on) that "didn't pan out." I realized I needed to better understand how to read and collect data, as well as how to best interpret and manipulate the data. I also learned how experimenting and creating new data to make better decisions was the right thing to do. The motive?-- Customers want results immediately; opportunities are rarely present long. Today's industry demands high probability of success on nearly the first try and very few organizations can afford to make non-profitable decisions repeatedly. I have found that statistics is a necessary tool in helping engineers and companies face these challenges.

Sincerely,

Mark Gryskiewicz
Senior Process Engineer
3M Company