

Dr. Carl McAfee

Carl is a chemist who owns and operates McAfee Consulting LLC. He is a technical resource for small to medium sized manufacturing companies. He has a B.S. in Chemistry from Harding University and a Ph.D. in Analytical Chemistry from Texas A&M University. He also has a polymer characterization lab that he has put together to support his industrial clients. His research interests include, nanotechnology, polymer characterization, new materials, materials recycling, and designed experiments. His hobbies are sailing and growing grapes on his homestead in Kennedale.

The successful industrial career for a scientist will involve communication on many levels. We often underestimate the importance of clear concise and understood communication. We will discuss strategies for improving our verbal, written, and non-verbal communication techniques and how to implement them in the workplace. Examples we will discuss will range from getting that first job, to presenting our data and our work in a professional atmosphere, to socializing in a local city and culture that may be new to us as individuals.

Designed Experiments are a tool for the scientist which use algebra and statistical analysis for problem solving. They are a series of experiments where all of the factors are changed at the same time and responses are measured. The series of tests are analyzed as an entire data set and key statistics are calculated. From the analysis, we are able to determine the statistical significance of various factors studied. From the analysis, linear equations are generated which are useful in interpreting and understanding the results of the experiments. The software used for this demonstration will be Stat-Ease Design Expert. This tool is a very useful tool that was introduced to me when I started my professional career at the Dow Chemical Company.