



ONLINE **2022** DOE SUMMIT

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Mr. Davies received a bachelor’s degree in Physics from the University of Delaware and started his career as a process engineer for a solar cell “start-up” in Newark, DE. Over the next 15 years he managed Process Optimization/Yield Improvement efforts as the company grew into a major independent solar cells manufacturer. Through the use of applied analytics and statistical process control the team realized \$3.6 Million annual savings.

Mr. Davies then spent 5 years with a ceramic composites manufacturer where he led a Process Optimization/Yield Improvement program that resulted in a sustained \$11.8 Million savings per year. The company wide effort featured Six Sigma techniques to bring together Senior Management, R+D SMEs,

Production Managers, Engineers, Production Operators, and Maintenance Technicians. Statistical analysis tools and predictive modeling methods resulted in solutions as simple as the “\$5 O-ring” that saved \$400K per month. These yield improvements allowed for 1,000s of additional ESAPI body armor tiles to be delivered to the Warfighters per month.

For the past 12 years, Mr. Davies has been a Research Physicist with the U.S. Army DEVCOM Chemical Biological Center at Aberdeen Proving Grounds, MD. He is a member of the Decontamination Sciences Branch which specializes in developing techniques/chemistries to neutralize chemical warfare agents. He is dedicated to applied statistical analysis ranging from multi-laboratory precision studies to Design of Experiments (DOE). The Decontamination Sciences Branch has been integrating DOE methods into many of their chemical agent decontamination research programs. Specifically, over the past several years Mr. Davies has worked with researchers to develop Mixture-Process DOE techniques to simultaneously model the influences of formulation components and process conditions which has greatly accelerated the optimization process for decontamination formulations. The introduction of DOE methodology has reduced sample sizes by 70-90% while at the same time allowing for more variables to be included in the studies which has resulted in many unexpected scientific discoveries.