

Invitation from ASQ Greater Houston Section September 17, 2020 Virtual Meeting

DATE:

Thursday,
September 17, 2020

Modeling and Reducing Variation in Design and Manufacturing

This is a virtual/online meeting. Meeting information and instruction for how to join the meeting will be provided 24 hours before the event.

Time:

6:00 PM – 7:00 PM PDT

Cost: Free for ASQ members

To register for this online/virtual meeting, click [here](#).

Attendance at this meeting earns 0.5 RUs toward ASQ recertification.

NOTE: Be sure to use the same email address to join the virtual meeting as you use when registering in order to receive the RUs. You must register for the event and join virtually to receive RUs.

For more information about the Greater Houston ASQ Section #1405, click [here](#).

For more information about our local Columbia Basin ASQ section and future upcoming events: www.asq614.org/



Engineers are taught to create designs that meet customer specifications. When creating these designs, the focus is usually on the nominal values rather than variation.

We need designs that are insensitive to variability in the inputs; for example, an engineer choosing nominal values for the resistors in a voltage divider that minimize the variation of the output voltage. Much of the literature on robustness is dedicated to experimental techniques, particularly Taguchi techniques. Taguchi techniques advocate using experiments with replications to estimate variation. The goal is to optimize the signal-to-noise ratio where the signal is the nominal output and the noise is the variation of the output.

Mathematical formulas based on derivatives to determine system variation based on input variation and knowledge of the engineering function will be presented in this virtual event, along with animations to allow for a user-friendly presentation. If the function is unknown, experimental techniques may be used to empirically estimate a function. These techniques work equally well for designing

About the speaker: Currently Executive Engineer for SKF, Bryan Dodson has 30 years of leadership in product development and manufacturing. Prior to joining SKF, he held the positions of Senior Director Corporate Quality & Continuous Improvement for Collins & Aikman and Senior Manager of Quality & Reliability Engineering with global responsibility for Visteon. Dr. Dodson has authored several books including: Probabilistic Design for Optimization and Robustness for Engineers, the Reliability Engineering Handbook, Practical Accelerated Testing, and Weibull Analysis: with Software. Dr. Dodson has also developed several software packages including the Reliability & Maintenance Analyst which is the standard for NASA. He is an ASQ fellow, an SAE fellow, a licensed professional engineer, an ASQ certified quality engineer, and an ASQ certified reliability engineer.