

stat teaser

Workshop Schedule

DOE Simplified

October 4: MN ASQ Conf., Minneapolis, MN
An overview of Design of Experiments (DOE) from A to Z, based on the popular book. \$295* (\$195 each, 3 or more)

Statistics for Technical Professionals

October 5–6: Minneapolis, MN
Revitalize the statistical skills you need to stay competitive. \$995* (\$795 each, 3 or more)

Experiment Design Made Easy

June 8–10: San Jose, CA **SOLD OUT!**
July 13–15: Minneapolis, MN
August 17–19: Philadelphia, PA
September 21–23: Minneapolis, MN

Study the practical aspects of DOE. Learn about simple, but powerful, two-level factorial designs. \$1495* (\$1195 each, 3 or more)

Response Surface Methods for Process Optimization

June 22–24: Minneapolis, MN
October 12–14: Minneapolis, MN
Maximize profitability by discovering optimal process settings. \$1495* (\$1195 each, 3 or more)

Mixture Design for Optimal Formulations

August 3–5: Minneapolis, MN
November 9–11: Minneapolis, MN
Find the ideal recipes for your mixtures with high-powered statistical tools. \$1495* (\$1195 each, 3 or more)

Robust Design: DOE Tools for Reducing Variability

September 14–16: Minneapolis, MN
Use DOE to create products and processes robust to varying conditions. A must for Six Sigma. *Factorial and RSM proficiency are required.* \$1495* (\$1195 each, 3 or more)

PreDOE: Basic Statistics for Experimenters

Six-hour web-based training. This course or the equivalent is a prerequisite for all workshops—www.stateease.net. \$95

Attendance is limited to 20. Contact Sherry at 800.801.7191 x18 or sherry@stateease.com.

*Includes a \$95 student materials charge which is subject to state and local taxes.



ABOUT STAT-EASE SOFTWARE, TRAINING, AND CONSULTING FOR DOE
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Katie's Coke® vs Pepsi® DOE

This past year my youngest daughter Katie challenged me to a blind taste-test of Coca-Cola® versus Pepsi-Cola® soft drinks. Her 7th grade social studies teacher had done something similar in her class that day to illustrate how advertising influences consumer perceptions. I was tired after a day of teaching DOE and figured a good dose of caffeine might help me stay awake to moonlight on a new book titled, "RSM Simplified" (due out 2004). Katie helped me experiment on spring toys for a general factorial design featured in the first volume, "DOE Simplified" (Productivity, 2000). She also participated in a similar DOE on flying disks that we published in one of my prior columns for this newsletter (September 2002, Stat-Teaser). Therefore, Katie fancies herself quite the experimenter and wanted to dig into the business herself.

While Katie prepared in our kitchen for the cola challenge, I settled at my home office (really just a broken-down old roll-top desk) and sat staring at my computer screen. I chuckled to myself when Katie paraded in with two glasses—one made of white foam and the other of blue plastic. She explained that, although I and other taste testers in the household should not be told which cola was which, she needed to keep them straight. Before we get to the "lessons learned" part, let's give her credit for replicating the test, rather than just doing it once on me!

"Katie," I said, "Do you realize that



you've made the fundamental error of confounding my treatment of Coke versus Pepsi with my preference for white versus blue and Styrofoam versus plastic?" She gave me this look. I've seen it before from my other daughters and sons and even more powerfully from my wife. It's not good, but it was worth taking a hit to defend the sanctity of unaliased experimental designs. If one cola is always in white styrofoam and the other cola is always in blue plastic, there is no way to tell if my preference for one over the other is due to the type of soft drink or the type of cup—these factors are aliased. For instance, perhaps in general people prefer drinking pop in a plastic cup rather than a Styrofoam cup. Then whichever cola is in the plastic cup would get the most favorable reviews.

In the end, both Katie and I came out of this experience with positive thoughts. My daughter got her revenge later that evening when she confronted me with three cups of cola all in foam containers this time. "OK Dad," she said with a gloating look, "Taste these and tell me if

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