April 2, 3:30-4:30pm
Seitz 313

William H. Woodall

Rethinking Control Chart Design and Evaluation

Some practical issues are addressed involving the control of the number of false alarms in process monitoring. This topic is of growing importance as the number of variables being monitored and the frequency of measurement increase. An alternative formulation for evaluating and comparing the performance of control charts is given based on defining in-control, indifference and out-of-control regions of the parameter space. Methods are designed so that only changes of practical importance are to be detected quickly. This generalization of the existing framework makes control charting much more useful in practice, especially when many variables are being monitored. It also justifies to a greater extent the use of cumulative sum (CUSUM) methods.

Reference: Woodall, W. H. and Faltin, F. W. (2019). "Rethinking Control Chart Design and Evaluation," *Quality Engineering* 31(4), 596-605.

William H. Woodall is Professor Emeritus of Statistics at Virginia Tech. He is a former Editor of the *Journal of Quality Technology* (2001–2003) and Associate Editor of *Technometrics* (1987–1995). He has published over 150 refereed journal papers, most on various aspects of process monitoring. He is the recipient of the ASQ Shewhart Medal (2002), ENBIS Box Medal (2012), William G. Hunter Award (2019), Jack Youden Prize (1995, 2003), ASQ Brumbaugh Award (2000, 2006), Ellis Ott Foundation Award (1987), Soren Bisgaard Award (2012), Lloyd S. Nelson Award (2014), and an *IIE Transactions on Quality and Reliability Engineering* best paper award (1997). He is a Fellow of the American Statistical Association, a Fellow of the American Society for Quality, and an elected member of the International Statistical Institute. Current research interests include sampling issues related to process monitoring, risk-adjusted outcome monitoring in healthcare applications, and social network monitoring.