# Statistical Engineering Division Seminar

**Tuesday April 30, 1996, 11:00 am**

**Room 618, Bldg 820/NIST North**
**NIST**
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# What Does the "Law of Propagation of Uncertainties" Approximate?

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The ISO *Guide to the Expression of Uncertainty in Measurement* describes a procedure that aims to generate uncertainty intervals having a "level of confidence of approximately 95 percent." The basic procedure is described as "approximate" because it uses a first order Taylor series to derive the variance of the measurement result. This informal talk will explore, through examples and comparisons, the ambiguity that one can encounter in trying to characterize the goodness of this approximation. In particular, an example due to Charles Stein shows that there can be a wide discrepancy between belief-based and frequency-based uncertainty intervals.

Keith Eberhardt is a member of the Statistical Engineering Division at NIST, where he has been thinking about the evaluation and expression of measurement uncertainty for some seventeen years. He has a Ph.D. in statistics from The Johns Hopkins University and a B.S. in mathematics from Case Western Reserve University. Before coming to NIST, he was an Assistant Professor of statistics at Ohio State University.

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