

# MEASUREMENT UNCERTAINTY WORKSHOP

Rio Hotel, Convention Center, Las Vegas, NV, USA  
April 2<sup>nd</sup>, 2017 from 9am to 4pm  
[www.astfe.org/courses/muq/](http://www.astfe.org/courses/muq/)



**ASTFE**  
American Society  
of Thermal and Fluids Engineers



## Description

This 6-hour course will provide an introduction and references for further study on measurement uncertainty. Several hands-on examples will be performed during the course with participants using their own computer. The course will be based upon traditional uncertainty analysis with correlated uncertainties, but will go beyond current textbooks on several topics including independent sampling and limitations of current methodology.



## Objectives

- Introduction to Measurement Error and Uncertainty
- Uncertainty of a Single Variable
- Propagation of Uncertainty Using Taylor Series and Monte Carlo Methods
- A Priori Uncertainty Quantification for Experiment Planning
- A Posteriori Uncertainty Quantification



## Who Should Attend

The course is appropriate for anyone who has an undergraduate understanding of measurements. The information presented will be relevant to anyone interested in a better understanding of the distinctions between uncertainty and error, or random and bias error sources. We will discuss how to interpret uncertainty information and move beyond uncertainty procedures. A broader class of error sources will be discussed than in a typical treatment (e.g. uncertainty stemming from material property data), as well as correlation between error sources.



## Instructors



**Professor Barton Smith**  
Utah State University



**Dr. Douglas Neal**  
LaVision Inc.



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