

James Littlefield



The Northern Ohio/Western Pennsylvania section held its spring meeting on April 14th, 2015. The meeting was hosted by the Keithley Instruments, Cleveland, Ohio. A special thanks to the Keithley's team and our contact Ralph Travise.

We started the meeting at 9:00 am with introductions of all participants.

The first presentation, "Gage Error Studies" was presented by Paul Mathews of Mathews Malnar and Bailey, Inc. Paul presented a case study of hand held bore gages used to hold tight tolerances on the large diameter bore of gears for Caterpillar. The studies objective was to determine the best gage. Several old and new gages were evaluated. The analysis of the data was surprising - people's prior opinions of the different measurement instruments didn't have any bearing on how the instruments performed. In the end, the oldest gage should the least variation.

Ben Yurick, Design Engineer for Keithley Instruments, presented concerns and issues with electronic equipment measurement uncertainty specifications. Comparison and contrast of different AC measuring techniques including traditional AC RMS converter IC's and digit sampling techniques utilized in today's digital multimeters. We uncovered accuracy differences, crest factor uncertainty, design limitations, and calibration/verification challenges.

The morning sessions ended with a tour of Keithley's Metrology department. Ralph Travise, Quality Manager for Keithley, included a description of Metrology Department's role in supporting Keithley instruments. Keithley team members describe the systems at each test station.

At noon, participants were dismissed for lunch. Keithly provided in-house dining facilities.

Dilip Shah, of E=mc3, provided training and hands on demonstration of Proficiency Testing. Training include the need for proficiency testing, current industry requirements, and an explanation of some the options. Dilip divided attendees into groups and dispensed artifacts. Groups then participated in a proficiency testing study. Afterwards, Dilip analyzed the data and presented results. A Q&A session followed.

The meeting wrapped up with Lloyd Baker, NCSLI Regional Coordinator. Lloyd covered NCSLI Updates, held an open discussion, including reviewing NCSLI's mission and recruited volunteers.

Planning is underway for our next meeting in October 2015.

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Dilip Shah.