

CENTRAL INDIANA SECTION 1133

By Charles Andrew



The Central Indiana Section 1133 fall meeting was held on November 1, 2012 at Endress + Hauser in Greenwood Indiana. A total of 52 participants were in attendance. The theme of the meeting was Uncertainty Analysis, Budgeting, Reporting and Application of ILAC P14. Due to the breadth of the subject, the meeting was scheduled to start an hour earlier than normal and most of the crowd was on time.

Our primary speaker/trainer for the day was Dilip Shah. Known by nearly everyone in the metrology and quality world, Dilip is a Principal of E = mc³ Solutions, a consulting practice that provides training and consulting solutions in *ISO/IEC 17025*, *ISO/IEC 9001/TS 16949*, Measurement Uncertainty and computer applications. Dilip provided four hours of training plus copies of an uncertainty spreadsheet to all participants for no charge.

Dilip started his session with learning objects followed with a definition of traceability and requirements of ILAC P14. He then defined Calibration Measurement Capability (CMC), test uncertainty ratios and measurement uncertainty. Dilip then gave his seven steps for determining measurement uncertainty, discussed Type A and Type B components, uncertainty distributions and methods of combining uncertainties with different distributions.

Dilip then lead the participants in a couple of measurement exercises to help reinforce the learning objectives. He had volunteers make measurements of Lego™ plastic blocks using calipers. These measurement data were used to compute a very complete uncertainty budget. These exercises were followed by an extensive Q & A session.

Lunch was provided by our host, Endress + Hauser, Inc. There was an amazing



Central Indiana Meeting.

amount of interaction between the participants and with the speakers. The energy level was high and everyone seemed to be engaged in the day's learning activities. Participants were about half metrologists and half quality professionals. Many comments were heard about how Dilip's style was so effective and how much they appreciated his time.

The second speaker was Lloyd Baker of Trescal - Dynamic Technology and the NCSLI Mid-Western US Region Coordinator. Lloyd presented "Update from the NCSLI Board of Directors." The most recent meeting was held in Jackson, Wyoming. Lloyd reminded us that all members are welcome to attend the BOD meetings and to look in the current publications and on the NCSLI website for dates and times.

Our original plan was to have the "Update from the Board" delivered by Marcus McNealy, NCSLI Northeastern US Division VP. Unfortunately, Hurricane Sandy hit his home area a day or two before our meeting was scheduled. Many expressed their thoughts and wishes for the safety and wellbeing of Marcus and all affected by Hurricane Sandy.

Our third session was titled "Practical Application of Uncertainty Analysis with Special Emphasis on ILAC P14." This was a panel discussion moderated by John Bush, Associate Consultant Engineer, Eli Lilly

and Company. The panel members included Dilip Shah, Randy Long of Laboratory Accreditation Bureau, Kyle Shipps of Endress + Hauser, and Anthony Hamilton of Eli Lilly and Company. Each panel member was invited to participate due to their expertise and experience in various aspects of uncertainty analysis. Questions were asked by the moderator and members of the audience. The discussion was lively.

The last activity of the day was an optional tour of the Endress + Hauser manufacturing and calibration facilities. Their main products at this facility are flow meters. Most impressive is their flow calibration rig that can be used to calibrate flow meter up to 48 inches in diameter.

The Central Indiana Section steering committee members are Dan Leonard, Quality Control Sales and Services, Kevin Pata, Roche Diagnostics, Bridget Bray, John Bush, Beverly Aikins and Elizabeth Robinette of Eli Lilly and Company. The committee extends its thanks to Endress + Hauser for letting us use their wonderful meeting facilities. Specifically we thank Kyle Shipps and the E+H facilities support personnel who helped make the meeting an outstanding success.

candrew@lilly.com