



2019 NCSL INTERNATIONAL
WORKSHOP & SYMPOSIUM
August 24–29, 2019
Huntington Convention Center, Cleveland, OH
Call for Papers
Abstract Deadline March 31, 2019
Manuscript Deadline May 20, 2019

NCSL INTERNATIONAL
Serving the World of Measurement

Course Catalog Number: Ttm-4
Course Track: Thermodynamic Measurements
Course Topic: Temperature
Course Career Level: Intermediate+

Monday, August 26 | 1:00 PM - 5:00 PM | 1/2-Day (PM)

Course Title: Advanced Topics of Temperature Measurement and Calibration

Instructor: Mike Coleman, Fluke Calibration

Abstract: This course is designed for someone who has experience in temperature calibration and is looking to take their knowledge to the next level. It can also provide a refresher to align your knowledge with current best practice and updates in international temperature metrology and calibration especially when considering new and exciting events affecting temperature calibration such as the redefinition of the kelvin, changes with *ISO/IEC 17025:2017*, and exciting new future technologies. Other topics covered in this course are the latest recommendations for PRT and SPRT management, in-depth analysis and understanding of thermocouple theory and calibration methodology, fixed-point cell operational theory including a review of important fixed-point cell calculations and uncertainty control methods.

Learning Objectives:

1. Learn the latest happenings in temperature calibration and what the future looks like with the new SI definition of the kelvin.
 2. Provide in-depth understanding of mathematics used with PRTs and apply it for effective drift management of PRTs and SPRTs.
 3. Obtain comprehensive knowledge of how thermocouples work, how to calculate important uncertainty values, and properly connect a thermocouple for calibration and measurement.
 4. Gain a working knowledge of fixed-point cell theory of operation including review of important sources of uncertainty and how to control them.
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Instructor Curriculum Vitae (CV):

Michael Coleman is the corporate temperature metrologist for Fluke Calibration. He has worked in test and calibration for 23 years starting at Intel and 20 years at Hart Scientific and Fluke Calibration. His areas of expertise in contact thermometry are calibration of SPRTs, PRTs, Thermocouples, Thermistors, Digital Thermometer Systems, Humidity Sensors, and Humidity Chambers. Michael works as the technical manager of the primary temperature calibration laboratory in American Fork, Utah supervising calibration processes and working with Fluke design engineering in development of new Fluke temperature calibration products. He has presented papers at NCSLI, TEMPMEKO, METROLOGIA (Brazil), CENAM (Mexico), and MSC. Michael has also taught temperature tutorials at NCSLI for several years. He

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also provides webinar-based training and classroom training at Fluke Calibration. He graduated from Brigham Young University with a BS in Electronics Engineering Technology.