



**NCSL INTERNATIONAL  
WORKSHOP & SYMPOSIUM**

Walt Disney World Swan & Dolphin Hotel  
Orlando, Florida

**JULY 28 - 31, 2014**

July 25 - 27 Tutorial Program  
July 27 - 30 Exhibition Hall

*Join Us for the*

# WORKSHOP & SYMPOSIUM

**MEASUREMENT SCIENCE AND THE ENVIRONMENT**

## *Don't Miss This Event!*

- Keynote Speaker: Dr. Martin Milton, Director of the BIPM
- 110 Newly Authored Technical Papers
- A New Track Entitled "Pressing Problems – Real Research" Presented by NIST and NRC on Leading Edge Topics
- 25 Tutorials – Register Today!
- A Day of "Energy" Technical Papers
- 120+ Product & Service Vendors
- NCSLI Committee Meetings
- Great Food, Lodging and Networking with Colleagues

# CONFERENCE HIGHLIGHTS

## PRESSING PROBLEMS — REAL RESEARCH

World experts in exciting technical areas will come together to present on pressing societal issues and the importance of measurements in addressing them. These presentations will focus on clearly explaining the science of these issues while also investigating the relevant measurement challenges and solutions. This combination of fascinating science with a measurement perspective should make this an unforgettable series of talks. Topics include a range of vital scientific issues ranging from global climate change to alternate energy to advanced manufacturing to the U.S. metric program.

## A FOCUS ON ENERGY

Measurement Science plays multiple roles in all aspects of the energy industry. The energy focused sessions will center on measurements associated with smart energy, infrastructure, and measurements associated with power systems. Do not miss this day of energy if you work in utility management, or as a planner, engineer, or technician working in measurement science relating to distribution, transmission, generation, reliability, power quality and smart energy, or are an associated supplier supporting the energy industry.

## TUTORIAL PROGRAM

What are we offering for the 2014 Tutorial Program? Plenty.

Just a few to whet the appetite:

- NEW! Geometric Dimensioning & Tolerancing Basics Workshop!
- LabView Automation software training
- ASTM E617:2013 Standard Training on Weights and Precision Mass Standards
- ISO/IEC 17025 Laboratory Accreditation and Management Quality Track
- Metrology Parameters Training: Temperature, Force, Torque, Humidity

## THE POSTER SESSIONS

Join us in the Exhibit Hall on Monday, Tuesday and Wednesday to view our poster presentations, and talk with their authors! NCSLI will feature 50 different presentations.

## Please Welcome KEYNOTE SPEAKER DR. MARTIN MILTON

Dr. Martin Milton took over as Director of the International Bureau of Weights and Measures (BIPM) in 2013 after a long career at the UK's National Physical Laboratory.



His time at the NPL began in 1981, shortly after he earned a BA in physics from the University of Oxford. Over the next 31 years, he earned both a PhD from the University of Southampton and an MBA from London Business School and rose to become an NPL Fellow.

Dr. Milton led NPL's work in gas metrology and also conducted research into isotope dilution mass spectrometry and raman spectroscopy. He was one of the founding members of the Consultative Committee for Amount of Substance (CCQM) and published early work on the nature of primary methods in chemistry. He has always had a special interest in the applications of standard gas measurements to environmental measurements, and was involved in the assessment of global emissions of methane for the Inter-governmental Panel on Climate Change (IPCC).

In 2013 he was awarded an honorary professorship in chemistry by the University of York.

## Conference Sponsors



Agilent Technologies



VISIT [NCSLI.ORG](http://NCSLI.ORG) FOR THE COMPLETE WORKSHOP & SYMPOSIUM PROGRAM

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## TUTORIAL PROGRAM

- T1** Train the Trainer: Making Adult Learning Come to Life
- T2** An Introduction to Instrument Control and Calibration Automation in LabVIEW
- T3** ASTM E617: Standard Specification for Laboratory Weights and Precision Mass Standards (2013 Revision)
- T4** Fundamentals of Calibration in Dimensional Metrology
- T5** Understanding ISO/IEC 17025 Requirements
- T6** Fundamentals of Gas Flow Measurement
- T7** Pressure Metrology
- T8** Running the Effective Laboratory Better – Data Driven Improvements that Matter
- T9** Control Charts and Stability Analysis for Calibration Laboratory Reference Standards
- T10** Geometric Dimensioning & Tolerancing Basics Workshop
- T11** Pipette Calibration, Use, and Uncertainty for the Metrologist, Assessor and Laboratory User
- T12** Root Cause Analysis
- T13** Applying LEAN techniques in a Calibration Laboratory Environment
- T14** Auditing, Traceability, and Auditing Traceability
- T15** Measurement Uncertainty
- T16** Fundamentals of Torque Calibration
- T17** Intermediate Dimensional Metrology
- T18** Measurement Decision Risk
- T19** Force Calibration
- T20** Fundamentals of Radiation Thermometry Calibration
- T21** Fundamentals of Temperature Calibration
- T22** A Comprehensive Training Program for Bio-Pharma Laboratories
- T23** Train the Trainer: Evaluating Performance, Learning Objectives and Training Effectiveness for Managers
- T24** Humidity Calibration Tutorial
- T25** Microwave Measurement Basics Cable Maintenance

## TECHNICAL PROGRAM HIGHLIGHTS

### Pressing Problems - Real Research

How International Metrology Really Works - A Little Lady's Foray into an Old-Boys' Club  
*Dr. Georgette Macdonald, NRC Program Leader*

Boltzmann and Avogadro and Planck, Oh My... (and your little charge too...)  
*Dr. Alan Steele, Chief Metrologist for Canada*

Greenhouse Gas and Climate Science Measurements Research at NIST  
*Dr. James Whetstone, Special Assistant to the NIST Director for Greenhouse Gas Measurements*

Metric System in the U. S.: Current Efforts & Future Opportunities  
*Elizabeth Gentry, U.S. Metric Program Manager*

NIST's Net-Zero Energy Residential Test Facility  
*Dr. Hunter Fanny, Chief of the NIST Energy and Environment Division*

Airborne Particulate Matter: Metrology Challenges  
*Dr. Greg Smallwood, NRC Program Leader, Measurement Science for Emerging Technologies*

Measurement Challenges in Advanced Communications  
*Dr. Michael Janezic, Acting Leader of the NIST Radio Frequency Field Group*

Who Needs Calibrations Anyway?  
*Dr. Gregory Strouse, Leader of NIST Thermodynamic Metrology Group*

Measurements for Nanomanufacturing  
*Dr. David Seller, Chief of the NIST Semiconductor and Dimensional Metrology Division*

Embedded Standards: Future Opportunities for Measurement Services  
*Dr. Thomas O'Brian, Chief of NIST Time and Frequency Division*

### Energy

Metering Technology Center Values Laboratory Services  
*Edward Hass, Consumers Energy Company*

An Advanced Intelligent Electronic Device Platform  
*Roberto Piacentini, National Instruments Corporation*

Fleet Wide Monitoring: Sensors to Prognostics  
*Preston Johnson, National Instruments Corporation*

High Precision Battery Testing for Automotive and Grid Applications  
*Harold Parks, Sandia National Laboratories*

Unique Type of High Shock Calibration System Using Electromagnetic Exciter  
*Jiun-kia Che, Industrial Technology Research Institute (ITRI), Taiwan*

Application of GUM-S1 to Results in Testing of Losses in Power Transformers  
*Marcelo Luiz Lourenco, Universidade Federal de Goias, Brazil*

Ensuring Accurate and Safe Calibration of Electrical Safety Equipment  
*Michael Bailey, Transmille, Ltd*

Instrumentation and Measurement Society IEEE TC 39: Measurements in Power Systems  
*Lorenzo Peretto, University of Bologna, Italy*

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# REGISTER TODAY

NCSLI.ORG

## BANQUET NIGHT

Enjoy entertainment by *The Smokin' Torpedoes* at Banquet Night.



*The Smokin' Torpedoes* consist of experienced musicians committed to providing an entertaining, live performance based on a variety of blues influences. Each member brings their own unique style to the band, providing every listener with genuine blues rhythms, melodies and the charisma associated with bands paying tribute to the music we all love... the BLUES.

## 2014 NCSL INTERNATIONAL WORKSHOP & SYMPOSIUM RATES

### FULL CONFERENCE

	Regular Rate Ends May 31	Late Rate Begins June 1
Member / Non-Member	\$995/\$1,150	\$1,155/\$1,275
One Day Registration	\$550	\$550
Extra Luncheon Tickets	\$35	\$35
Banquet Ticket	\$50	\$50

### TUTORIAL PROGRAM

	Regular Rate Ends May 31	Late Rate Begins June 1
2 Day Tutorial Member / Non-Member	\$700/\$800	\$750/\$850
1 Day Tutorial Member / Non-Member	\$450/\$550	\$475/\$575
1/2 Day Tutorial Member / Non-Member	\$275/\$375	\$300/\$400

### HOTEL RATES

Walt Disney World Swan & Dolphin Hotel  
1500 Epcot Resorts Blvd | Lake Buena Vista, Florida | 1-888-828-8850

	Group Rate
NCSLI Group Rate	\$178 + tax

Resort Service Package including In-Room High-Speed Internet Access is available at an additional charge.

## EXHIBITORS

## Exhibition Hall July 27 – July 30

A.K.O. Inc. Torque Specialties Division  
A2LA - American Association for Laboratory Accreditation  
ABTech Inc.  
AccuMac Corporation  
Additel Corporation  
Agilent Technologies  
Ametek Test & Calibration Instruments  
Andeen-Hagerling, Inc.  
ANSI-ASQ National Accreditation Board/ ACLASS  
ASQ-MQD  
AssetSmart  
ATS Metrology  
Bionetics Corporation; Newark Metrology Ops  
Bruel & Kjaer North America Inc.  
Cal Lab Solutions  
Calibrate, Inc.  
Consumers Energy Laboratory Services  
Dallas CVB  
Data Proof  
E + E Elektronik  
Essco Calibration Laboratory  
Exelon Powerlabs  
Flexium Americas Corporation  
Fluke Calibration

Fowler Precision Tools  
GE Measurement and Control Solutions  
Guildline Instruments Limited  
Heusser Neweigh  
IEEE I&M  
Interface, Inc.  
International Accreditation Service (IAS)  
Isotech  
JM Test Systems  
King Nutronics Corporation  
Lockheed Martin MST  
Lockheed Martin Technical Operations  
Mahr Federal  
Measurement Science Conference  
Measurements International  
Meatest, s.r.o.  
Mensor Corporation  
Mettler Toledo  
Mitutoyo America Corporation  
Morehouse Instrument Company  
National Metrology Institute of Japan, AIST (NMIJ/AIST)  
National Research Council Canada  
National Voluntary Laboratory Accreditation Program (NVLAP)  
NCSL International  
NIST - Physical Measurement Laboratory

Northrop Grumman Corporation  
NRD Advanced Static Control  
OHM-Labs, Inc.  
Pond Engineering Laboratories  
Pratt & Whitney Measurement Systems, Inc.  
Precision Environments Quality Digest  
Quality Magazine  
Radian Research  
Ralston Instruments  
RH Systems  
Rice Lake Weighing /Condec  
Sartorius  
SIMCO Electronics  
Tegam  
Tektronix  
The Boeing Company  
The Modal Shop  
Thunder Scientific Corporation  
Tovey Engineering  
Transcat, Inc.  
Transmille Calibration  
Trescal  
Vaisala Inc.  
Vibration Research Corporation  
Western Environmental Corporation  
WorkPlace Training