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This Month in History

August 1, 1779 - Francis Scott Key (1779 - 1843) was born in Frederick County, Maryland. He wrote the poem *Defense of Fort McHenry*, which later became known as the *Star-Spangled Banner*. The poem is based on the British bombardment of Fort McHenry in Baltimore Harbor on September 13 - 15, 1814.

August 5, 1861 - President Abraham Lincoln signed into law the first federal income tax on incomes over \$800. This was an emergency wartime measure during the Civil War; however, the tax was never put into effect.

August 6 - 10, 1787 - During the Constitutional Convention, the Great Debate occurred. The outcome was the establishment of a four-year term of office for the President. Congress was also granted the right to regulate foreign trade and interstate commerce.

August 14, 1935 - President Franklin Roosevelt signed the Social Security Act that established a system that guarantees pensions to those who retire at age 65. This Act also provides for aid to dependent children, the blind and others.

Elizabeth Gentry Wins NCSLI Education and Training Award

The National Conference of Standards Laboratories International (NCSLI) Education and Training award is one of the highest awards of the organization and is given to an individual or group of individuals for outstanding leadership and contributions to the field of Metrology Education and Training. The purpose of the award is to provide incentive for and recognition of outstanding contributions to the field of Metrology Education and Training to support meeting workforce challenges and, in particular, contributions that are in consonance with the goals and purposes of NCSLI. This year, the award has gone to Elizabeth Gentry, who is the Metric Coordinator at the National Institute of Standards and Technology (NIST), Office of Weights and Measures.



Elizabeth is actively involved in education and outreach activities for both the metric system and metrology careers at NIST by participating in the annual "Take our Sons and Daughters to Work Day," NIST's "Science: Get Psyched" efforts with the National Capital Area Girl Scouts, as well as NIST's "Summer Institute for Middle School Science Teachers." She has created several interactive games (i.e., Metric Estimation Game and Frog Leap) to give participants (e.g., students K to 12+ and adults) hands-on experience to develop their competence in applying the metric system in measuring, weighing, and in estimating different quantities. These activities have been received with outstanding acceptance by the participants and the programs have been rated "a perfect idea" for a classroom activity and an "engaging" and "fun" experience. One new resource she developed, "The Scale of Things," has received outstanding reviews from teachers for its simple yet informative approach to teaching students how to relate metric measurements to national landmarks and everyday items.



In addition to metric outreach, Elizabeth conducts numerous webinars for the laboratory metrology community on such topics as Contract Review, Document Control and Record Keeping, Internal Auditing Best Practices, and Conducting an Effective Management Review.

Finally, she has been integrally involved with the success of NCSLI's efforts in education and outreach. Through her leadership, the NCSLI Education and Outreach Liaison Committee, the Metrology Ambassador educational outreach effort, and the Metrology Careers partnership, together has reached nearly 30,000 students over the past five years with the message about measurement science and career opportunities in metrology.

Tina Butcher Receives the NCWM Distinguished Service Award

Tina Butcher of the National Institute of Standards and Technology (NIST), Office of Weights and Measures Legal Metrology Devices Group began her public service in the Pest Management program at the Maryland Department of Agriculture. Pest management experience must have prepared her well for her illustrious career in weights and measures. In 1983, she was transferred to Maryland's Weights and Measures Program where she spent five years as a field inspector.

In 1987 she moved on to NIST, Office of Weights and Measures. With that move, Tina quickly became involved in the NCWM. Among her list of contributions, she was technical advisor to the Task Force on Energy Allocation in 1988 and 1989; the Multiple Dimension Measuring Devices Work Group in the early 1990s; the Task Force on Safety from 1989 to 1991, the Executive Committee in 1991, the Liaison Committee in 1993 and 1994; the Handbook 44 Reorganization Work Group from 1999 to 2001; and the Automatic Temperature Compensation Steering Committee in 2008 and 2009.



Her technical advisor service to NCWM standing committees include the Specifications and Tolerances Committee from 1993 to 1998 and again from 2008 forward, and the Professional Development Committee in 2007 and 2008. Tina is well-known for her contributions to the National Type Evaluation Program (NTEP) over many years. She has been technical advisor to many NTEP groups including the Measuring Sector from 1988 to 1995 and from 2008 to 2011; the Weighing Sector from 1992 to 1997; the Grain Moisture Meter Sector from 1992 to 1995; the Belt-Conveyor Scale Sector in 1997; the NTEP Committee from 1999 to 2001; the Laws and Regulations Committee regarding the model NTEP regulation from 1999 to 2002; the United States/Canada Mutual Recognition Work Group from 1994 to 2000; and the NTEP Long-Term Business Plan Work Group from 1998 to 2000. Tina was the NTEP Manager from 1994 to 2000 prior to transfer of

Calendar 2012

Registration for training in the NIST Office of Weights and Measures is handled by Yvonne Branden at yvonne.branden@nist.gov.

Course descriptions can be viewed on the Office of Weights and Measures website by clicking on the name of the course.

<http://www.nist.gov/pml/wmd/calendar.cfm>

August 29

U.S. National Work Group on Measuring Systems for Electric Vehicle Fueling
Web-based Teleconference
1:00 p.m. to 3:00 p.m. EST
E-mail: marc.buttler@nist.gov

August 30 (2 hours)

Webinar - Proficiency Testing Follow Up Actions and Root Cause Analysis
Class No. 5181

September 6 (2 hours)

Webinar - Conducting an Effective Management Review
Class No. 5178

September 10 - 13

Central Weights and Measures Association (CWMA) Interim Meeting
Bettendorf, IA
Contact: Vicky Dempsey at
dempseyv@mcchio.org

September 10 - 13

NEMAP*
Class No. 5154
Portland, ME
Contact: Danny Newcombe at
Danny.Newcombe@maine.gov

September 13 (2 hours)

Webinar - Internal Auditing Best Practices
Class No. 5182

September 16 - 20

Western Weights and Measures Association (WWMA)
Breckenridge, CO
Contact: Mahesh Albuquerque at
mahesh.albuquerque@state.co.us

September 24 - 26

U.S. National Work Group on Taximeters
NIST
Contact: John Barton at
john.barton@nist.gov

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its administration to NCWM. In addition to all of these contributions to NCWM, Tina has made significant contributions at NIST with development assignments in the Malcolm Baldrige National Quality Award Program and in the NIST Director's Office in 2002 and 2003. She is recipient of the U.S. Department of Commerce Bronze Medal in 2003.

Through all of this continuing service, Tina has made significant and lasting contributions to codes throughout Handbook 44 and was integral in the creation of code sections such as the Mass Flow Meter Code. She is widely regarded for her superior technical writing skills and her calm manner that leads to input from others toward sound decision making. She has also earned the respect of NCWM members for her ability to inject important technical and historic information while avoiding personal dictation in the decisions. Tina's long-term service to NCWM and the weights and measures community is truly remarkable. Tina's personal time is devoted to her family and other activities including the Altar Guild and teaching children's classes at her church. She is Co-Director of her church's Junior Daughters of the King Chapter and enjoys volunteering in her daughter, Holly's, various sports and school activities.

Training Excellence: WHAT DOES SUCCESS LOOK LIKE?

By Georgia L. Harris and Carol T. Hockert

The National Institute of Standards and Technology (NIST) Office of Weights and Measures (OWM) has been working the last few years toward compliance with several educational standards in support of our training program for the legal metrology and laboratory metrology community. We believe that complying with some rigorous models will help us provide excellent training opportunities for our stakeholders. These standards include the American National Standards Institute/International Association for Continuing Education and Training (ANSI/IACET) standard for Continuing Education and Training, the Baldrige Quality Award-Educational Criteria, and portions of ISO/IEC 17024 on personnel certification. In fact, the Baldrige Quality Award criteria are presented in its publications as a framework for "performance excellence" and references "benchmarking" in several instances. So, even without becoming an IACET Authorized Provider or receiving a Baldrige quality award, we can benchmark our operations against these documents to assess training excellence and to identify opportunities for improvement.

As we got started on the strategic aspects of applying these standards to our OWM training efforts, we began by asking the question, What does success look like? We asked our staff, key customer groups, and training participants, and we got a long list back. We matched up the list of success factors with the criteria in each of the documentary standards, and it fit together remarkably well. We didn't get as complete a list from staff and stakeholders as were stated in the standards, so we identified a few gaps. The educational standards included a few additional items that, upon review, we agreed were important for success, even though they were not explicitly stated in the feedback we gathered.

September 24 - 27
SWAP*
Class No. 5126
Baton Rouge, LA
Contact: Richert Williams at
richer_w@ldaf.state.la.us

October 1 - 5
47th CIML Meeting, 14th OIML Conference
Bucharest, Romania
Contact: Charles Ehrlich at
Charles.Ehrlich@nist.gov

October 5 - 6
Measuring Sector Meeting
Louisville, KY
Contact: Luanne Groenjes at info@ncwm.net

October 7 - 10
Southern Weights and Measures Association
(SWMA)
Louisville, KY
Contact: Jason Glass at (502) 573-0282
jason.glass@ky.gov

October 15 - 18
MidMAP*
Class No. 5155
Sioux Falls, SD
Contact: Brad Stover at
brad.stover@state.sd.us

October 15 - 26 (2 week)
Mass Metrology Seminar
Class No. 5192

October 16 - 17
Northeastern Weights and Measures Association
(NEWMA) Interim Meeting
TBD
Contact: James Cassidy at
jcassidy@cambridgema.gov

October 18 (2 hours)
Webinar - State Laboratory Annual Submission
Process**
Class No. 5190

November 1 (2 hours)
Webinar - State Laboratory Annual Submission
Process **
Class No. 5191

November 5 - 9 (1 week)
Fundamentals of Metrology
Class No. 5206

December 3 - 7 (1 week)
Intermediate Metrology Seminar
Class No. 5164

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The rest of this article covers six ideas of what training excellence looks like in terms of the standards and our efforts at NIST. These concepts are important, whether you are a student, managing staff development, or are a trainer yourself. Some key sections of the documents are highlighted as notes in case you'd like to explore these documents further.

A key question for you, as you consider the highlighted areas, How do you measure success of training? ISO/IEC 17025 for calibration and testing laboratories requires labs to plan for training needs and evaluate training effectiveness. What are your measures of success in your needs assessment and effectiveness evaluation?

Success means we have an infrastructure to manage training efforts.

We need a way to identify the organizational structure and which staff is involved in what aspects of our training efforts. In the Office of Weights and Measures, we have to coordinate with about eight other NIST groups to schedule, offer, and conduct one of our courses. Those of us involved in that coordination need that process documented for consistency and effectiveness. We have online calendars for our training and application processes for students to register for courses. We also have online access to student transcripts to enable participants to track their prior training from our office.

Note: ANSI/IACET Section 1, Organization, 2, Responsibility and Control, 3, Support Systems, and 9, Maintaining Learner Records. Baldrige Section 1, Leadership, Category 6, Process Management.

Success means instructors are educational professionals and subject matter experts.

In the NIST OWM, we have been providing regular professional development opportunities for our staff to become better trainers and to gain additional experience in our subject matter. We have sponsored several Train the Trainer workshops at NIST in the past three years and have opened up the training to others here at NIST. We have also been sharing best practices on effective activities and assessment methods for our seminars – including the classroom, the laboratory, and via webinar.

In partnership with the NCWM, additional Train the Trainer courses are being planned for regional weights and measures trainers. Individual jurisdictions and other organizations can also assure that their trainers are educational professionals by identifying local developmental opportunities for those employees that conduct routine training.

Note: ANSI/IACET Section 6, Planning and Instructional Personnel. Baldrige Section 5, Workforce.

Success means we evaluate training and training programs.

Course evaluations have long been a part of the OWM training program. However, they have historically been little more than satisfaction-level evaluations to ask, “Did you like the training?” Developing a more rigorous evaluation process for each course and the entire program has been our effort in the last three years. We have been considering how to better evaluate training efforts through the use of the Kirkpatrick/Phillips evaluation models. Note that all of the seminar evaluations at NIST consider more than participant satisfaction levels. A key aspect of the evaluation is

2013

January 27 - 30
National Conference on Weights and Measures (NCWM) Interim Meeting
Francis Marion Hotel
Charleston, SC
Contact: info@ncwm.net

January 28 - February 1 (5 days)
Volume Seminar
Class No. 5193

February 4 - 7 (4 days)
Advanced Mass Seminar
Class No. 5204

February 11 - 14 (4 days)
Advanced Mass Hands-On Seminar
Class No. 5205

March 4 - 15 (2 weeks)
Mass Metrology Seminar
Class No. 5207

March 25 - 29 (5 days)
Packaging and Labeling Seminar
Class No. 5224

April 8 - 11
SEMAP*
Class No. 5209
Tifton, GA

April 15 - 19 (5 days)
Fundamentals of Metrology
Class No. 5208

May 6 - 9
Northeastern Weights and Measures Association (NEWMA)
Saratoga, NY
Contact: James Cassidy at
jcassidy@cambridgema.gov

May 6 - 9
WRAP*
Class No. 5216
Helena, MT

May 13 - 24 (2 weeks)
Mass Metrology Seminar
Class No. 5217

May 20 - 23
Central Weights and Measures Association (CWMA)
Overland Park, KS
Contact: Maureen Henzler at
maureen.henzler@kda.ks.gov

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whether or not the data gathered is actually used to measure effectiveness of training and to identify areas for future improvement. So, at NIST, we also often conduct an After Action Review of the courses and consider input from both the students and instructors in identifying opportunities for change.

We have been conducting a follow up evaluation of some students to assess application and impact, and intend to expand this effort in the future.

Note: ANSI/IACET Section 10, Program Evaluation. Baldrige Category 4, Measurement, Analysis, and Knowledge Management.

Success means we design for and measure application and impact.

When attending a NIST training course, students are sometimes told, “It doesn’t matter how much you know if you don’t apply it to your work!” But, getting participants to apply new learning for effectiveness and impact takes more than just saying a few words about doing it. Designing courses so that students get beyond the “knowledge” level on Bloom’s taxonomy to the “application” (or higher) levels takes effort and time. We have completely redesigned our OWM laboratory metrology courses with “application” levels in mind. We have selected course learning objectives that drive application. We have selected activities that allow practice at the application level. And, we assess student participation on whether they have successfully completed course objectives at the application level. As we begin to assess application, we are moving away from just automatically granting everyone a certificate of attendance (versus a certificate of successful completion).

For the weights and measures community as a whole, it is up to each individual instructor to apply these concepts. Further, each instructor needs to be willing to assess students at the stated levels. Instructors may not want to police this aspect of learning, but it’s a responsibility all trainers should take on.

Note: ANSI/IACET Sections 4, Learning Event Planning, and 7, Content and Instructional Methods. Baldrige Section 7, Results.

Success means we gather data on training needs.

We need to have an internal planning process to identify future courses. This area is one where we have great opportunities for improvement. In the NIST OWM, we have many channels for input into future training offerings. These include individual requests, identified needs based on commonly asked questions, new technologies that will require a new training effort, and new marketplace challenges. Collecting all of this data in a standardized way to prioritize our efforts relies on the technical expertise of our staff to filter all of the data and make decisions. However, this is far from a standardized, documented process.

While we may be doing a good job identifying training needs, we could do a better job by formalizing how we collect and analyze data on training needs and use it to prioritize our training efforts.

Note: ANSI/IACET Section 4, Learning Event Planning. Baldrige Section 6, Customer Focus.

Success means we have a partnership among the trainer, stu-

September 9 - 12
NEMAP*
Class No. 5258
Harrisburg, PA

September 16 - 19
MidMAP*
Class No. 5259
Springfield, IL

September 22 - 25
Western Weights and Measures Association (WWMA)
Kalispell, MT
Contact: Doug Deiman at
doug.deiman@alaska.gov

September 23 - 26
SWAP*
Class No. 5220
Phoenix, AZ

*Invitation Only

**Limited to State Laboratory Program Participants

NOTICE

U.S. NATIONAL WORK GROUP ON TAXIMETERS

A meeting of the U.S. National Work Group (USNWG) on Taximeters will be held at NIST, Gaithersburg, Maryland, September 24 to 26, 2012. This USNWG is working to develop standards and policies related to the regulation of taximeters in the United States. This recently formed USNWG held its first meeting via web-conference on May 12, 2012. The initial meeting served as an orientation for the work group and the group’s objectives and work plan were presented to members.

Additional information regarding the September meeting can be found at the following URL: <http://www.nist.gov/pml/wmd/taxi-wrkgrp.cfm>. Contact Mr. John Barton at (301)975-4002 or at john.barton@nist.gov if you have an interest in participating in this USNWG.

dent, and student's managers.

No matter how good a trainer is in a class and how excited a student is about gathering and applying new information into their work, no improvements will be made without the support of the manager back on the job. This is another area where we all have an opportunity to improve. Engaging the manager is essential for all aspects of our training cycle: from needs assessment to establishing learning objectives and from conducting the training to applying it on the job. We sometimes have requests from managers after the event on how well their staff performed in the class. But, rarely do we get questions from the managers ahead of time about what they could expect from the participant after the training. This is an effort we are pursuing within OWM.

Before you schedule training for your organization, think about this partnership as you begin planning the event. Provide your expectations to the instructor and students ahead of time, including desired learning objectives. And, if you are a trainer, interact with the manager prior to conducting training to make sure the training will meet management's expectations. But don't forget the student's role in all of this. Both managers and trainers should communicate the same expectations to the students for maximum effectiveness of training.

Note: ANSI/IACET Sections 4, Learning Event Planning and 8, Assessment of Learning Outcomes. Baldrige Category 7, Results.

Your Turn!

Training excellence means many things to many people, just as successful training means different things to everyone. However, by using the benchmark standards we can focus on some uniform factors, assess for compliance, select areas to highlight for our effectiveness, and select action items for continual improvement. You've read what we're doing. Now, it's your turn. What does training excellence mean to you? How will you assess training effectiveness for your staff? How will you assess the next training event in which you participate? Let us know at owm@nist.gov!

NOTICE

U.S. NATIONAL WORK GROUP ON MEASURING SYSTEMS FOR ELECTRIC VEHICLE FUELING

A U.S. National Work Group (USNWG) is forming to develop proposed requirements for commercial electricity-measuring devices (including those used in sub-metering at residential and business locations and those used to measure and sell electricity dispensed as a vehicle fuel) and to ensure that the prescribed methodologies and standards facilitate measurements that are traceable to the International System of Units (SI). This work is not intended to address utility metering in the home or business where the electricity metered is consumed by the end purchaser.

The USNWG first web-meeting was held August 29, 2012. It is not too late to participate if you have an interest in developing requirements for this ground-breaking technology. Please contact Marc Buttler, (301) 975-4615 or at marc.buttler@nist.gov. Additional information is available at <http://www.nist.gov/pml/wmd/evse-wrk-grp.cfm>.

TRAINING - HANDBOOK 133 - CHECKING THE NET CONTENT OF PACKAGED GOODS

Training focus will be on the requirements and basic test procedures for packages labeled by weight. This will include, but not be limited to a review of U.S. Weights and Measures Law, good quality control processes, sampling, calculating standard deviation, moisture allowances, inspection reports and calculations, test procedures, tare, relevant court cases, drained weight, ice-glazed procedures, and more.

The sessions will include formal lecture, class discussion, exercises, reading assignments, audio-visual presentations, and plenty of hands-on practice. Students must be in attendance for the entire class, successfully complete assignments and a final exam. Students who do not fulfill those requirements will not receive a certificate of completion. We will be providing each participant with a DVD that includes the presentation materials for their use in providing training for other officials.

Training Dates: Monday, December 10 to Friday, December 14, 2012

Sponsor: NC Dept. of Agriculture and Consumer Services

Online Registration URL: <https://tsapps.nist.gov/WMD/>

Location: Raleigh, NC

Class No: 5227

Contact: Yvonne Branden, (301) 975-3272