UNITED STATES DEPARTMENT OF COMMERCE
National Institute of Standards and Technology
Gaithersburg, Maryland 20899-

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MEMORANDUM FOR: RMAP Participants and Laboratory Directors

From: Micheal Hicks,
Laboratory Metrology Program Manager
Office of Weights and Measures

Micheal Hicks

Subject: 2026 Regional Measurement Assurance Programs (RMAP) Training

You are cordially invited to register for and attend the NIST Office of Weights and Measures (OWM) 2026 Regional Measurement Assurance Program (RMAP) training. The 2026 training events are in person meetings (dates and locations are included below and listed on *https://www.nist.gov/pml/owm/owm-products-and-services/training-classes-and-events*); one event is scheduled in each of the five US RMAP geographical areas.

NIST OWM collaborates with state lab hosts to offer annual training and networking opportunities for state lab participants, as outlined in NIST Handbook 143. We encourage participating labs to send as many metrology staff members as possible to take advantage of this opportunity. The "Agenda at a Glance" and "Abstracts with Learning Objectives" sections summarize this year's training topics, which were selected based on annual needs assessments and input from laboratory participants.

Weights and Measures participants:
Annual attendance at the RMAP training session is required for ongoing laboratory recognition by NIST OWM and for participation in ongoing RMAP proficiency tests (PTs); please refer to NIST Handbook 143 for the criteria used for OWM Laboratory Recognition and to NISTIR 7082 for PT policies.

Non-Weights and Measures Participants
Training sessions are open to registered participants. If you are a regular associate member of the RMAP training sessions *and* have completed training at the requisite levels, you may participate in the national and regional proficiency tests coordinated by the RMAPs. Additional training opportunities are posted here: https://www.nist.gov/pml/owm/laboratory-metrology/lab-metrology-training.

Registrations:
TWO registrations are required for the RMAPs (one with OWM and one with the local host).

Step 1 (OWM): Register for your RMAP by selecting the correct region course number in the Office of Weights and Measures Contact System (https://owm.nist.gov/s/). New users should follow the instructions to create an account. If you have any questions, please contact Pam Corey at pamela.corey@nist.gov. The OWM Contact System generates an attendee registration list (which is shared with the local host) and provides training certificates after the event.

Step 2 (Local host): Pay the conference registration fee. Registration fees for the RMAP training are determined by the local hosts, cover all costs associated with the meeting, and must be paid by each attendee.

Schedules:

The schedule, location, and contact for each RMAP training session are listed in the Region table below. Local hosts will provide details on the hotel and local registration; this information will be accessible no later than sixty days before the training, through the hyperlinks in the "Region" column of the table below.

Region	Dates	City, State	Host Contact	Registration deadline
SEMAP	March 24 to 26, 2026	West Columbia, SC	Tim Jones tjones@scda.sc.gov (803) 253-4052	February 24, 2026
WRAP	May 5 to 7, 2026	Sacramento, CA	Tony Gruniesen anthony.gruneisen@cdfa.ca.gov (916) 229-3000	April 7, 2026
NEMAP	June 9 to 11, 2026	Harrisburg, PA	Jim Gownley jgownley@pa.gov (717) 787-0937	May 12, 2026
SWAP	September 1 to 3, 2026	New Orleans, LA	Whitney Corley/Jennifer Adair wcorley@ldaf.la.gov jadair@ldaf.la.gov (225) 922-1381	August 4, 2026
MidMAP	September 22 to 24, 2026	East Lansing, MI	Nick Santini santinin@michigan.gov (517) 655-7229	August 25, 2026

Agenda at a Glance:

Sessions are held Tuesday through Thursday from 8:00 am to 5:30 pm each day. Successful completion requires full attendance and participation in group activities. If any participants leave early, attendance certificates will be adjusted accordingly. Full attendance is required by the laboratory for full Recognition and participation in PT's (NIST HB 143).

Tuesday	Wednesday	Thursday
• Intro and Training agenda review • RMAP Laboratory Round Table *(Lab Reports)*	• Vertical audit in mass calibrations: Part I	• Vertical audit in mass calibrations: Part II
Lunch	**Lunch**	**Lunch**
• PT Reports • PT Planning • Lab Visit	• Measurement assurance activities • Proficiency testing NISTIRs 7082 and 7214	• Length calibration (incl. hands-on) • Training recap

Abstracts with Learning Objectives:

TUESDAY

Training Agenda Review

A brief review of the training topics and agenda covered in the three-day session will be provided. This year, the focus of the NIST OWM Recognition Special Technical Audit (STA) is on performing a vertical audit on mass Echelon III metrology (SOP 8 or equivalent) workload. OWM will demonstrate a walkthrough of this type of audit throughout the training session.

Laboratory Round Table (Lab Reports)

Regional Measurement Assurance Program "round table" discussions are held to capture laboratory updates, challenges, and changes associated with staffing, facilities, procedures, equipment, standards, (sections 6.2, 6.3, 6.4, 6.5, in the ISO/IEC 17025 standard) and accreditation topics. These discussions help identify regional trends and changes (economic or measurement related) among the laboratory community and encourage networking for problem solving.
OWM staff facilitate this session.

Learning Objectives: After this session, participants will be able to:

- IDENTIFY general issues facing laboratories within their region; and
- DESCRIBE action items they may want to take based on sharing and feedback during this session; and
- IDENTIFY unique issues that may require national-level coordination or assistance.

RMAP PT Reporting and Planning

During this session, PT coordinators present and facilitate discussion of proficiency testing results, analysis, and corrective actions.

During this session, each regional group, facilitated by their regional PT coordinator, is also responsible for updating their 4-year plan with input from OWM (*OWM Objective: Ensure compliance with the NIST*

Policy and Plan (NISTIR 7082 and HB 143). PTs are planned to ensure that, where practical, every laboratory has a PT available to cover every area of their scope on a roughly four-year cycle (every recognized and/or accredited laboratory must have a PT Plan available for their Recognition and/or Accreditation Body).

Learning Objectives: After this session, using the PT Plan, PT reports, and OWM PT Policy, participants will be able to

- LIST all the proficiency tests that are being coordinated nationally and within the region that are applicable for their laboratory;
- DESCRIBE one method/approach for PT analysis.
- DESCRIBE potential action items needed for follow up concerning your PT participation results; and
- IMPLEMENT the regional PT four year plan in your laboratory to execute laboratory quality assurance requirements.

Lab Visit and Assessment

(*Laboratory addresses are included at the end of this memo; transportation arrangements can be coordinated with other participants during the morning*)

Participants will receive guidance on observing specific laboratory components and identifying at least one best practice or idea to implement in their own laboratory and/or share with the host.

Learning Objectives: After this session, participants will be able to

- IDENTIFY best practices and opportunities for improvement in laboratory facilities.

WEDNESDAY

Vertical Audit in Mass Calibrations: Part I

Audits can take many forms; in this session, we will step through a vertical technical audit in a calibration lab, using exercises and case studies based on SOP 8 to enable each participant to apply this type of audit in their laboratory. With a specific focus on breaking down the audit into steps. The audit also dovetails into measurement assurance topics, including updates to the OWM proficiency test program in the afternoon.

We will cover how to audit, with objective evidence, the steps of a mass calibration process, including:

- contract review (including supplier evaluation)
- intake and handling
- preparation
- measurement (including validated procedures (GLP 14) and SOP 8 considerations)
- data reduction (the software tools) and
- measurement assurance including proficiency tests (per the 2026 version of NISTIRs).

This session will include an overview of best practices in technical auditing methods, supplemented by participants from each region sharing examples from their laboratories (contact OWM if you have an example *you would like us to incorporate into the materials).*

Learning Objectives: After this session, participants will be able to:

- IDENTIFY requirements for implementing an audit program;
- DESCRIBE approaches that can be used when conducting a mass vertical audit and types of objective evidence;
- CREATE a list of corrective or improvement actions that can result from a vertical audit.

Measurement Assurance
We will discuss control charting using the mass vertical audit as a starting point, including examples of common problems such drift or sudden shifts in check standard values. We will discuss when the assumption of data normality breaks down, and how to identify when that might be happening. We will then review a few examples of how to handle control charts that exhibit drift or shifts.

Learning Objectives: After this session, participants will be able to:

- RECOGNIZE signs of data that do not reflect a normal process
- APPLY techniques to test the assumption of normality
- APPLY pooling to deal with shifts in check standard values

NISTIR 7082 PT Policy and Plan
NISTIR 7214 Quality Manual, PT
The 2026 editions of NISTIR 7082 PT Policy and Plan and NISTIR 7214 Quality Manual introduce a more uniform process for PTs, aligning with ISO/IEC 17043 and the NIST Quality System. These publications facilitate compliance with ISO/IEC 17025, Sections 6.2 on staff competence and 7.7 on measurement assurance.
Participants will discuss the scheduling and evaluation of PT participation based on the laboratory scope and the benefits of reviewing PT results.

Learning Objectives: After this session, participants will be able to:

- IDENTIFY key considerations of the updates to the state lab PT process and program quality assurance;
- RECOGNIZE NISTIR 7082 and NISTIR 7214 key topics and where to find relevant information; and
- APPLY PT tools in lab functions to enhance measurement assurance.

THURSDAY

Vertical Audit in Mass Calibration: Part II
A continuation of the Wednesday session, continuing the calibration flow through the lab processes of determining uncertainty budgets, calibration certificate writing, return of artifacts to customers, customer survey, customer billing as well as the lab policy for nonconforming work and policy of auditing in general. We conclude with a discussion of a lab response action plan for improvements, risk identification and action items that may result from a vertical audit.

Learning Objectives: After this session, participants will be able to:

- IDENTIFY requirements for reporting results on calibration certificates and best practices for its generations;
- DESCRIBE challenges and methods of returning artifacts to customers;
- DESCRIBE common methods to seek customer feedback and invoice customers while maintaining objective evidence for the entire calibration process; and
- EXAMINE laboratory nonconforming work policy and areas of improvement.

Length Calibration. SOP 10, SOP 12 and review SOP 11
We will review a Standard Operating Procedure (SOP) from the NISTIR 8028, *Selected Laboratory and Measurement Practices and Procedures for Length Calibrations* including data reduction, uncertainty calculation and control-charting. We will discuss a case study in length calibration, including risk and reward. This session will include hands-on calibration activities (tape-to-tape or rigid rule).

Learning Objectives: After this session, participants will be able to:

- Follow the procedures to COMPARE an unknown length artifact to a physical standard; and
- CALCULATE the measurement error and uncertainty, and
- IDENTIFY suitability of length calibration in the laboratory's scope
- IDENTIFY risk of not performing length calibration services

Participants should bring the following to the RMAP training event:

1. Laboratory audit program procedure
2. Laboratory documents related to Mass Vertical Audit (SOP 8 or equivalent).
    a. Policy documents related to procedure
    b. Completed supplier evaluation (related to mass calibration process)
    c. Records of verification of the calibration procedure(s).
    d. Relevant control chart(s)
    e. Uncertainty budget
    f. Example calibration certificate
3. Length calibration data reduction spreadsheet, as applicable

Laboratory Addresses:

Region	Lab Address
SEMAP	South Carolina Dept of Agriculture D. Leslie Tindal Metrology Laboratory 129 Ballard Court West Columbia, SC 29172
WRAP	State of California Metrology Laboratory Division of Measurement Standards 6790 Florin Perkins Road, Suite 100 Sacramento, CA 95828
NEMAP	Pennsylvania Standards Laboratory 2221 Forster Street Rm G-44A Harrisburg, PA 17125
SWAP	Louisiana Dept of Agriculture and Forestry Metrology Laboratory Weights and Measures Division 5825 Florida Boulevard Baton Rouge, LA 70806-4259
MidMAP	Michigan Dept of Agriculture and Rural Development E.C. Heffron Metrology Laboratory 940 Venture Lane Williamston, MI 48895-9028