# Environmental Measurement Symposium

A Combined Meeting of The National Environmental Monitoring Conference
and The Forum on Laboratory Accreditation

## Preliminary Program

Washington, DC
August 10 – 16, 2008

# Symposium Sponsors



# Exhibitors

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# Welcome

We are pleased to invite you to the Environmental Measurement Symposium, a combined meeting of the Forum on Laboratory Accreditation and the National Environmental Monitoring Conference (NEMC). This year, the Symposium is being held in Washington, DC at the Hyatt Regency Washington on Capitol Hill.

The Forum on Laboratory Accreditation is the semiannual meeting of The NELAC Institute (TNI). The National Environmental Monitoring Conference is a technical conference sponsored by The NELAC Institute (TNI), the Independent Laboratories Institute (ILI) and the US Environmental Protection Agency (USEPA). The sponsors of NEMC decided to combine NEMC with the Forum on Laboratory Accreditation to reduce the travel costs for many attendees that come to both meetings and to further enhance the quality of both meetings due to the cross-exchange of information on topics of mutual interest.

Some of the highlights of the week include:

- Four special keynote presentations on topics of general interest;
- 120 technical presentations and posters on a variety of cutting-edge environmental monitoring issues;
- Meetings of 14 TNI Committees to further the efforts to establish a national environmental laboratory accreditation program;
- A special day that features updates from each of the major progam offices of the USEPA, followed by two panels with presentations on "EPA Analytical Needs of the Future" and "Future Trends in Monitoring";
- An open meeting of the USEPA's Environmental Laboratory Advisory Board (ELAB);
- Five training courses on advanced monitoring techniques, data usability and laboratory accreditation issues;
- An exhibit program with more than 30 exhibitors; and
- Two receptions to allow you to network with your peers.

This meeting brings together quality professionals, chemists, analysts, microbiologists, engineers, and managers from Federal and State agencies; commercial, municipal, state, and federal laboratories; laboratory accreditation professionals; and many others who are actively involved and interested in environmental monitoring. Please take a few minutes to look over the preliminary program and register today. We look forward to seeing you in August.

Sincerely,

Judith Duncan

Oklahoma Department of Environment Quality
Board Chair, The NELAC Institute

Lara Autry

USEPA Office of the Science Advisor
Conference Chair,
National Environmental Monitoring Conference

THE NELAC INSTITUTE

NEMC

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

ILI
INDEPENDENT LABORATORIES INSTITUTE

ELAB

# Technical Program

## Monday, August 11

8:00 – 8:15 Welcome

8:15 – 8:45 Keynote Address: *Do We Need Elemental Speciation in Environmental Monitoring?*
Dr. Jorg Feldmann,University of Aberdeen

9:00 – 12:00 **Concurrent Sessions**

**NEMC***
- Air Methods
- Metals Speciation
- Performance Approach

**Forum on Laboratory Accreditation**
- Quality Systems Committee
- On-site Assessment Committee

12:00 – 1:30 The New TNI Air Proficiency Testing Committee *(Working Lunch)*

1:30 – 5:00 **Concurrent Sessions**

**NEMC***
- Air Methods (continued)
- Metals Speciation (continued)
- Homeland Security

**ELAB**
- Environmental Laboratory Advisory Board Open Meeting

**Forum on Laboratory Accreditation**
- Air Proficiency Testing Committee

## Tuesday, August 12

8:00 – 5:00 Poster Session and Exposition

8:15 – 8:45 Keynote Address: *EPA and Nanotechnology: Oversight for the 21st Century*
J. Clarence Davies, Resources for the Future

9:00 – 12:00 **Concurrent Sessions**

**NEMC***
- Nanotechnology
- Inorganic Methods
- Emerging Technologies

**Forum on Laboratory Accreditation**
- Proficiency Testing Committee
- Field Activities Committee
- Assessor Forum

12:00 – 1:30 TNI National Database Committee *(Working Lunch)*

12:00 – 1:30 TNI Advocacy Committee *(Working Lunch)*

1:30 – 5:00 **Concurrent Sessions**

**NEMC***
- Organic Methods
- Inorganic Methods (continued)
- Sampling and Field Measurements

**Forum on Laboratory Accreditation**
- Proficiency Testing Board
- Assessor Forum (continued)

** To view abstracts for the NEMC sessions, visit www.nemc.us.*

# Wednesday, August 13

8:00 – 5:00 Poster Session and Exposition

8:00 – 8:15 Welcome

8:15 – 8:30 *New Directions at EPA,* Dr. Pai-Yei Whung, Chief Scientist, Office of Science Advisor

8:30 – 9:15 *The Latest from the Office of Water,* Michael Shapiro, Deputy Assistant Administrator, Office of Water

9:15 – 10:00 *The Latest from the Office of Air*, Robert Brenner, Director, Office of Policy Analysis and Review, Office of Air and Radiation

10:30 – 11:15 *The Latest from the Office of Solid Waste and Emergency Response*, Matt Hale, Director, Office of Solid Waste, Office of Solid Waste and Emergency Response

11:15 – 12:00 *The Latest from the Office of Pesticide Programs and Toxic Substances*, Betsy Grim, Director of Quality Assurance, Office of Pesticide Programs, Office of Pesticide Programs and Toxic Substances

12:00 – 1:30 Lunch Provided

1:30 – 5:00 **Concurrent Sessions**

## EPA Panel on Analytical Capability Needs of the Future

- Analytical Methods for Contaminants of Emerging Concern
- More Reliable Approaches to Leach Testing
- Microbial Detection Methods for Drinking Water Rule Making
- EPA's Endocrine Disruptor Screening Program

## Panel on Future Trends in Monitoring

- Future Trends in Sensor Technology
- EXES – An Advanced System for Environmental Data Assessment and Data Validation
- New Developments in Field Analytical Technologies
- Flexible Approaches to Environmental Measurement – The Evolution of the Performance Approach

**Our exhibitors will showcase the latest innovations for environmental monitoring.**

**Exhibit Hours**
**Monday 5:30 pm to Wednesday 7:00 pm**

**Poster Sessions**
**Tuesday and Wednesday 8:00 to 5:00**

# Technical Program Schedule

## Thursday, August 14

8:00 – 8:15 Welcome

8:15 – 8:45 Keynote Address: *Moving Forward on National Accreditation*
Bob Wyeth, Columbia Analytical Services, and Director of The NELAC Institute

9:00 – 12:00 **Concurrent Sessions**

| NEMC* | Forum on Laboratory Accreditation |
|---|---|
| ♦ Innovative Approaches to Environmental Monitoring<br>♦ Improving Data Quality | ♦ Accreditation Body Committee<br>♦ Laboratory Accreditation System Committee<br>♦ Mentoring Session |

12:00 – 1:30 TNI Consensus Standards Development Board *(Working Lunch)*

1:30 – 5:00 **Concurrent Sessions**

| NEMC* | Forum on Laboratory Accreditation |
|---|---|
| ♦ Innovative Approaches to Environmental Monitoring (Continued)<br>♦ Data Usability<br>♦ ROHS, WEEE and other Global Chemical Regulations | ♦ Affiliate Accreditation Body Forum<br>♦ Technical Assistance Committee<br>♦ CLP Pre-Bid Caucus |

## Friday, August 11

8:00 – 8:15 Welcome

8:15 – 8:45 Keynote Address: *Global Monitoring of Persistant Organic Pollutants (POPs): UNEP's Experiences and First Results*
Dr. Heidelore Fiedler
Scientific Affairs Officer of the United Nations Environmental Program

9:00 – 12:00 **Concurrent Sessions**

| NEMC* | Forum on Laboratory Accreditation |
|---|---|
| ♦ International Approaches to Monitoring<br>♦ Contaminated Sediments | ♦ Website Committee<br>♦ National Environmental Laboratory Accreditation Program Board |

12:00 Conference Ends

** To view abstracts for the NEMC sessions, visit www.nemc.us.*

## NEMC

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Website: http://www.nemc.us

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## Thank you
**to all the volunteers who donate their time to make the Symposium a success!**

# Standard Methods: Theory and Application

The main goal of this course is to train the participant in understanding the structure of Standard Methods and how to use the Compendium to meet the requirements of compliance under the Clean Water Act and the Safe Drinking Water Act. The participant will follow along in their copy of Standard Methods 21st Edition making notations from the instructor's presentation and in-class participation. The participant should have upon completion of the class a clear understanding on how to use Standard Methods and a personal copy to utilize in their workplace. Sections of this course will:

1. Introduce the participant to the overall structure of Standard Methods and how each Part relies on information in other Parts.
2. Provide a detailed hands-on experience in utilizing the requirements in Part 2000, as they apply to Parts 3000 through 5000.
3. Step through each set of methods approved for 40 CFR 136 or 141 in Parts 3000 through 5000. Specific topics to be covered in each set of methods are:
    - General good laboratory practice requirements for the methods.
    - Specific chemical theory and application used in the methods.
    - QA/QC requirements as per the method or Part 2000.
    - Key errors that may be occur when using the method for 40 CFR 136 or 141 compliance.
    - Points of concern that may be raised by an auditor and how to respond.
4. Include class participation in example problems concerning auditor questions.

Instructor: Dr. Edward Askew, Part Coordinator for Standard Methods
Friday, August 15 and Saturday, August 16
Length: 1.5 Days
Fee: $495 (Includes a copy of Standard Methods)
Fee: $295 (Participant brings personal copy)

# Microwave-Enhanced Chemistry Sample Preparation

This course presents both selected applications and the theoretical non-intuitive relationships in microwave sample preparation featuring solvent and acid dissolution and extraction for elemental, ultra-trace elemental analysis and species analysis. Specific sample preparation for ICP-MS and ICP-AES and ESI-TOF-MS including fundamental relationships of analyte recovery, power, reagent temperature, pressure, matrices, chemical compatibility, and practical standard methods will also be discussed. Basic features of microwave decomposition methods, equipment, vessel design, and accessories will be covered. Methods for transfer of procedures between equipment are highlighted, and applied methods such as the new 3052, 3200, 3051A, 3015a, 3546, 3030K, and others developed for EPA SW-846 and other standards organizations using microwave sample preparation for analysis in soils, sediments, water, tissues, foods, blood, urine and combination of these samples are reviewed. Safety considerations in laboratory microwave-enhanced sample preparation and analysis are stressed.

Instructor: Dr. H.M. (Skip) Kingston, Professor of Analytical Chemistry and Environmental Chemistry at Duquesne University
Sunday, August 10
Seminar length: 4 hours
Fee: $195

# Compliant Analysis of Water, Liquid and Solid Wastes by ICP-AES and MS

This course will address the application of ICP-AES and ICP-MS for compliant analysis of water, wastewater and related solid wastes using USEPA Methods 200.5, 200.7, 200.8, 6010C, 6020A, and CLP ILM5.3. These procedures will be evaluated using QA/QC criteria and figures of merit such as IDLs, MDLs, CCV, ICV, LDRs, recovery from spiked matrix solutions, and CRMs. This course will provide an insight to practical water and waste sample analysis highlighting sampling strategies, sample preparation, instrumentation, spectroscopic, and non-spectroscopic interference effects and validation. The course will commence with a brief overview of sample collection and chain of custody procedures, sample preservation, holding times, and containers. Sample preparation schemes provided by USEPA (e.g., filtration, open vessel and microwave digestion) will be described and their efficiencies compared using recovery, contamination, sample throughput, and cost. Instrumentation will be reviewed - axial vs. radial CCD and CID ICP-AES and Collision vs. Reaction cells ICP-MS. Instrument set-up and optimization routines will be described. Emphasis will be placed on nonspectroscopic interference effects associated with sample introduction, the plasma, plasma-MS interface, and spectroscopic interferences, such as spectral overlap in AES and polyatomic ions in MS. Methods for their correction and compensation will be presented. ISO 17025 accreditation and analytical uncertainty will be addressed and the question of EPA procedures meeting requirements of ISO 17025 evaluated.

Instructor: Dr. Isaac (Joe) Brenner, University of Israel
Sunday, August 10
Length of Class: 8 hours
Fee: $395

# How To Make The Right Decision With Environmental Data Or How To Avoid Paying A Fine Or Penalty For Making The Wrong Decision

This course is intended to familiarize decision makers with the importance of receiving a data usability report. This Report will help the decision maker understand the risk associated with the decision and determine the defensibility or strength of making the right decision. The course presents examples to demonstrate how this defensibility ensures that fines or penalties are not incurred in the future. An overview of the processes needed to develop and complete a data usability report will be presented. The course content includes state-of-the-art techniques for data gathering and decision-making by using quality assurance and other planned approaches for making the right decision the first time.

How do you know if you the decisions you have made using data are scientifically valid, meaningful, and legally defensible? Making the wrong environmental decision can be costly to everyone involved. Sometimes it takes months or years before you find out that you made the wrong decision. It is very costly, not only in dollars, but also in time and to the environment. Making the right decision using the right data save time and money in the long run. Proper planning and documentation is required in order to achieve this goal. BUT – We continue to hear, "We don't have enough money to plan or do it right the first time!" THEN why do we always have enough money to do the sampling and testing again and again?

This training presents how, what, and why data usability reports are necessary to ensure the proper use of environmental data. Practical examples will be presented during the class that provides the decision maker with information on the risk(s) of making the right (or wrong) decision(s). Data usability reports are more than just providing letters with numbers, such as the current data validation practices. For example, if a laboratory reports a chemical of concern, such as PCBs, as not detected, but a data reviewer identifies characteristic peaks in the laboratory data output, the data review may determine that highly weathered PCBs are present. This means that the laboratory likely ran the method as prescribed, but did not observe or was not asked to report to the decision maker that aged PCB's are present, resulting in possible presence of contaminants that may be of concern. These and other critical data review, validation, and usability assessment information will be presented and addressed during this class.

Instructors: Marlene Moore, Advanced Systems, Inc., and James McAteer, QA / QC Solutions
Sunday, August 10
Seminar length: 7 hours
Fee: $395

# Electronic Delivery of Laboratory Data for the Next Generation… to Infinity and Beyond!

This training course will introduce and discuss the implementation of the Staged Electronic Data Deliverable (SEDD). Although the course will focus on implementing SEDD for the newly developed Inorganic Superfund Methods (ISM01.0) Statement of Work for EPA's Contract Laboratory Program (CLP), the course will also be applicable to anyone using SEDD, including organics and other programs. Laboratories, software vendors, and Architect-Engineer firms who are considering bidding on this contract or working with SEDD files would be highly encouraged to attend. SEDD is a universal format that can deliver environmental testing data for any program in an XML format. The course will introduce SEDD and discuss the various "Stages" and what type of data each can deliver. The structure of SEDD will be discussed that will show the type of data that is reported in a Stage 2a, 2b, or 3 SEDD file and how the files are constructed. The course will focus on the reporting of the data for the Stage 2a and 2b along with some discussion on Stage 3. SEDD allows for the complete linking of all samples to their associated Quality Control samples, the complete linking of all samples to their associated continuing and initial calibration data, and the complete linking of all reported results to the specific analysis that was used to derive that specific result. Numerous real examples will be displayed and discussed. The various means for constructing these files along with the current tools that can assist the laboratories with the evaluation of their in-house created files will be demonstrated. Overall, in the data review process, a significant cost savings has been demonstrated in the CLP through the use of these deliverables and associated software tools.

Instructor: John Nebelsick, EPA Office or Emergency Response
Friday, August 15
Seminar length: 7 hours
Fee: $0 (for individuals registered for the Symposium)
Fee: $95 (all others)

# Lodging


## Hyatt Regency Washington on Capitol Hill

400 New Jersey Avenue, NW
Washington, DC  20001
202–737–1234

Special advance registration rates of $154 night (single) can be obtained before July 10, 2008 by using the Hyatt's on-line hotel registration system at https://resweb.passkey.com/go/AACRED.

Discover our historic city from Hyatt Regency Washington on Capitol Hill.  Enjoy easy access to all the attractions of our nation's capital from the Hyatt's ideal location in the heart of this popular down-town neighborhood.  Walk to The Smithsonian and the National Mall, tour government centers, visit monuments, and museums – all just minutes from the hotel.

## Transportation

From / To Ronald Reagan National Airport:
Taxi:  Taxis are available outside the baggage claim area.  Fare is approximately $14 – $18 (10 – 20 minutes).

Metro Subway:  Take the Yellow/Blue line from the airport to the Gallery Place/Chinatown stop. Transfer to the Red line to Union Station (2nd stop).  The Union Station Metro stop is located three blocks from the hotel.  Fare is approximately $1.35 – $1.75 (20 – 25 minutes).

# Environmental Measurement Symposium
**Washington, DC**
**August 10 – 16, 2008**

## Registration Form

Name: _____
As it will appear on your name badge

Organization: _____

Address: _____

City: _____ State: _____

Zip: _____ Country: _____

Telephone: _____

Email: _____

Special Needs: _____
(e.g., dietary, hearing devices, etc.)

❑ This is my first time to attend these meetings.

❑ I will be accompanied by a guest or my spouse.

Note: If your organization requires you to have meals included as a separate line item, please contact Jerry Parr at jerry.parr@nelac-institute.org for payment instructions.

| Symposium Registration[1] | Full Conference[2] | Daily[2] | Select Day(s) | Amount |
|---|---|---|---|---|
| Attendee Registration | ❑ $415 | ❑ $170 | M T W Th F | |
| Participant[3] | ❑ $335 | ❑ $145 | M T W Th F | |
| EPA Employee | ❑ $235 | ❑ $ 95 | M T W Th F | |
| Student | ❑ $150 | ❑ $ 45 | M T W Th F | |
| Late Fee *(After July 18)* | ❑ $ 50 | ❑ $ 50 | | |
| Training Courses (See Course Catalogue for more details) | | | Fee | |
| Microwave-Enhanced Chemistry Sample Preparation | | | ❑ $195 | |
| Standard Methods,<br>Copy of 21st Edition Provided<br>Attendee Brings Personal Copy | | | <br>❑ $495<br>❑ $295 | |
| Compliant Analysis of Environmental Samples by ICP-AES and MS | | | ❑ $395 | |
| How To Make The Right Decision With Environmental Data | | | ❑ $395 | |
| Electronic Delivery of Laboratory Data for the Next Generation<br>Registered Symposium Attendees<br>Training Course Only *(Not Registered for the Symposium)* | | | <br>❑ $ 0<br>❑ $ 95 | |
| Late Fee *(After July 18)* | | | ❑ $ 50 | |
| | | | Total | |

### Payment Options

❑ Purchase Order #: _____
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### Send Payment & Registration Form to:

The NELAC Institute
P. O. Box 2439
Weatherford, TX 76086–0822

817–598–1624 FAX 817–598–1177

**or Register on-line at:** www.nelac-institute.org

**or email to:** jerry.parr@nelac-institute.org

Tax ID #: 81-0554715

**Notes:**
1. Symposium registration includes participation in all meetings, a CD-ROM of the proceedings, all printed materials, and continental breakfast and breaks. Training fees are separate.
2. All registration fees include lunch Monday through Thursday.
3. A Participant is a NEMC Session Chair, a speaker at NEMC, or a member of a TNI Committee or Board.

**CANCELLATION:** If you cannot attend, notification must be received by August 4. You may either send a substitute or receive a refund, less a $50 administrative fee.

**We are pleased to invite you to the Environmental Measurement Symposium, a combined meeting of the Forum on Laboratory Accreditation and the National Environmental Monitoring Conference (NEMC).**

**August 10 – 16, 2008**

**Washington, DC**

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