2026 All-Day
Professional Development Conference
Aerosol Sampling Update
AIHA Distinguished Lecturer - Dr. Martin Harper, PhD, CIH, FAIHA, CChem, FRSC, FASTM
Friday May 1, 2026
University of Wisconsin – Whitewater
Esker Dining Hall – Meeting Room EK0018
8:00 am – 4:30 pm

7:30 am – 8:15 am	Registration – Networking, Vendor Booths Over Refreshments
8:15 am – 8:25 am	Welcome & Program Introduction David Sherrard, President – Wisconsin Local Section - AIHA
8:25 am – 10:00 am	Part 1
10:00 am – 10:20 am	Break
10:20 am – 12:00 am	Part 2
12:00 pm – 1:00 pm	Lunch, Networking & Vendor Booths
1:00 pm – 3:00 pm	Part 3
3:00 pm – 3:20 pm	Break
3:20 pm – 4:15 pm	Part 4
4:15 pm – 4:30 pm	Closing

Description:

Do you know when to use a total or an inhalable sampler, which cyclone is best for respirable crystalline silica (RCS), or how to sample for inhalable fraction plus vapor (IFV)? Decisions regarding the assessment of exposure to chemicals are made on the results of exposure monitoring. Incorrect decisions can lead to regulatory and legal risks as well as risks to health. Research has been and continues to be undertaken to ensure the measurement of exposure to aerosols is most closely aligned with dose and resulting health effects. This research has led to better practices than those taught in the past. It is vital for hygienists to understand that new tools are available for more accurate assessments. This Course will provide an in-depth view of historical and current practices alongside developments taking place now that will influence future best practices. Data will be provided in support of these changes. Experiences in actual industrial situations will be provided for each topic area covered. Equipment will be provided for hands-on demonstrations.

Course Outline:

The history of aerosol particle sampling shows how advances in the theory of aerodynamics and penetration to the respiratory tract, and advances in sampling technology, have gone hand-in-hand over the past 100+ years, and have resulted in 20-30 year cycles of change in both limit values and sampling and analytical procedures, which is continuing today. This Course will present the current and future evolution of sampling and analytical methods in context of recent laboratory and field investigations. There will be a parallel focus on integrating sampling and analytical procedures, especially in relation to new, lowered exposure limits. Discussion topics include "total" and "inhalable" particle assessment, with special emphasis on the role of wall deposits; the thoracic particle fraction convention and its relationship to the EPA's PM conventions; respirable sampling, with special emphasis on respirable crystalline silica under new limit values; semi-volatile aerosols and techniques for the assessment of IFV limit values; acid mists; assessing nanoparticle respiratory deposition, and nanoparticle exposures in surgical smoke; sampling biological aerosols, including viruses; and recent developments to integrate aerosol sampling with end-of-shift and real-time exposure assessments. Participants will be encouraged to evaluate the impact of currently recommended procedures on their own programs and how data can be reconciled across changes in procedures.

Learning Outcomes

Upon completion, the participant will be able to:

1) appraise the concept that changes in exposure assessment methods are a response to improved scientific understanding and technical advances.
2) evaluate how changes in aerosol exposure assessment methods result in more accurate and useful assessments.
3) handle novel sampling systems.
4) compare their current understanding of aerosol sampling and analytical methods with the new and revised methods.
5) assess the likely impact of these changes on their own program.
6) discuss with others and critique the rationale for changing exposure assessment methods after years of collecting information using an established method.
7) integrate the information on new sampling techniques and the issues with respect to analysis to formulate pertinent questions for their laboratory.

Instructor Bio:

Dr. Harper has an MA in geology from Oxford University, a post-graduate diploma in pollution control, MSc in environmental science, a diploma in advanced analytical chemistry, and a PhD from the Department of Occupational Health at the London School of Hygiene and Tropical Medicine. He is a Certified Industrial Hygienist (CIH) and a Fellow of the American Industrial Hygiene Association (FAIHA), a Chartered Chemist (CChem) and Fellow of the Royal Society of Chemistry (FRSC) and a Fellow of the American Society for Testing and Materials (FASTM). He has 44 years of experience in environmental and occupational hygiene research, including 14 years as Chief of the Exposure Assessment Branch in the Health Effects Laboratory Division of the NIOSH, and a combined 15 years at two manufacturers of air sampling instruments. He has published over 150 peer-reviewed journal articles, book chapters, encyclopedia articles and standards. He served six years as Chair of the ISO Committee TC 146 (Air Quality), sub-committee 2 (Workplace Atmospheres) and remains active in ISO and ASTM Committees, writing Standards for air sampling instruments, and he is a participant in the Sampling and Laboratory Analysis and Aerosol Technology Volunteer Groups of AIHA. Currently, he is a Courtesy Professor in the Department of Environmental Engineering Sciences at the University of Florida and a consultant to the International Sampler Comparison Group. Dr. Harper is active in providing professional development courses for the AIHA, ACGIH, BOHS and IOHA.

Cost:

- **$175 for members $200 for non-members or $50 for students. Includes a continental breakfast, lunch, snacks and beverages**
- **You do not need an account to register online, you can register as a guest at WI-AIHA Events**
- **For registration by mail, please see the form and instructions on the next page.**
- **Registration deadline is April 15th.**

Parking will be included. You will receive an email with directions for applying for your free guest parking permit.

WI-AIHA May 1, 2026 PDC

NAME: _____

COMPANY: _____

CHECK ENCLOSED FOR: $_____

Mail the completed form and your check to:

Steve Strebel
WOHL
2601 Agriculture Drive
Madison, WI 53718