

GHS, TSCA Reform, Green Chemistry ... Oh My!

We manage regulatory change so you don't have to. SiteHawk customers are ahead of the curve regarding GHS transition, regulatory compliance, MSDS authoring initiatives, and more.

Hear how our customers have simplified their journey down the yellow brick road of chemical management.

▶▶ Listen Now



MSDS AUTHORIZING | MSDS MANAGEMENT | MSDS DISTRIBUTION



sitehawk.com
877.483.4295

Risk Assessment's New Era

Challenges for
Industrial Hygiene

- 22** Closing the Exposure Gap
- 28** AIHce Preview
- 30** Noise on (and off) the Job
- 38** Health and Safety at ESPN

Air Testing Laboratory

- Vapor Intrusion / Soil Gas
- LEEDs Testing
- Microbiology
- Industrial Hygiene
- Product Off-Gas Testing
- Indoor Air Quality
- Odor Identification
- Radon, Lead & Asbestos
- Particulates
- Formaldehyde

EAST COAST 800.220.3675

WEST COAST 866.798.1089



EMSL ANALYTICAL, INC.
LABORATORY • PRODUCTS • TRAINING
www.emsl.com





The global leader in analytical testing services.

Full-service environmental and industrial hygiene testing laboratories including:

- Vapor Intrusion/TO-15
- Lead
- Beryllium
- Methamphetamine
- Dietary Supplements
- Pesticides
- Perchlorate
- White Phosphorus
- Amines
- TEM characterization of nanoparticles
- Vermiculite
- Diacetyl/Acetoin
- ... and much more!



Salt Lake City · 960 West LeVoy Drive · Salt Lake City, UT 84123
Toll Free: +1 800 356 9135 · Phone: +1 801 266 7700

Cincinnati · 4388 Glendale Milford Rd. · Cincinnati, OH 45242
Toll Free: +1 800 458 1493 · Phone: +1 513 733 5336



www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER



Features

24 Risk Assessment's New Era

New risk analysis methods are allowing industrial hygienists to tackle ever more complex problems and make more informed decisions.

By G. Scott Dotson, Alan Rossner, Andrew Maier, and Fred W. Boelter

28 Everything Within Reach at AIHce

This June, Indianapolis, Ind., will host AIHce 2012, the premier OEHS conference and expo.

By Kay Bechtold

30 Total Noise Exposure

IHs must encourage workers to be conscious of noise in their environment and adopt safer behaviors.

By John C. Ratliff



Knowing

Hazardous emissions and spills require quick action to ensure the safety of workers and work sites. The **Thermo Scientific MIRAN SapphRe Ambient Air Analyzer** identifies and accurately quantitates a wide range of unknown gases within a single portable instrument. On-site answers mean faster corrective action and lower expenditures on routine outsourced analyses. Designed to address the most commonly found toxic industrial compounds in seconds it is the most versatile gas detectionsystem on the market today.

is half the battle

- [Find occupational and environmental hygiene equipment at thermoscientific.com/OEH](http://thermoscientific.com/OEH)

Editor in Chief
Ed Rutkowski: erutkowski@aiha.org

Editorial Assistant
Kay Bechtold: kbechtold@aiha.org

Senior Designer
Billy Stryker: bstryker@aiha.org

Advertising Representative
Network Media Partners
Ben Ledyard:
bledyard@networkmediapartners.com

Executive Director
Peter J. O'Neil, CAE: poneil@aiha.org

The Synergist® is a copyrighted publication of the American Industrial Hygiene Association, 3141 Fairview Park Drive, Suite 777, Falls Church, VA 22042; (703) 849-8888; e-mail synergist@aiha.org. No part of *The Synergist* may be reprinted without the express written consent of AIHA. Submission of articles or letters to the editor are welcome, but AIHA and *The Synergist* will determine what to publish and reserve the right to edit all submissions for content, style, length and clarity.

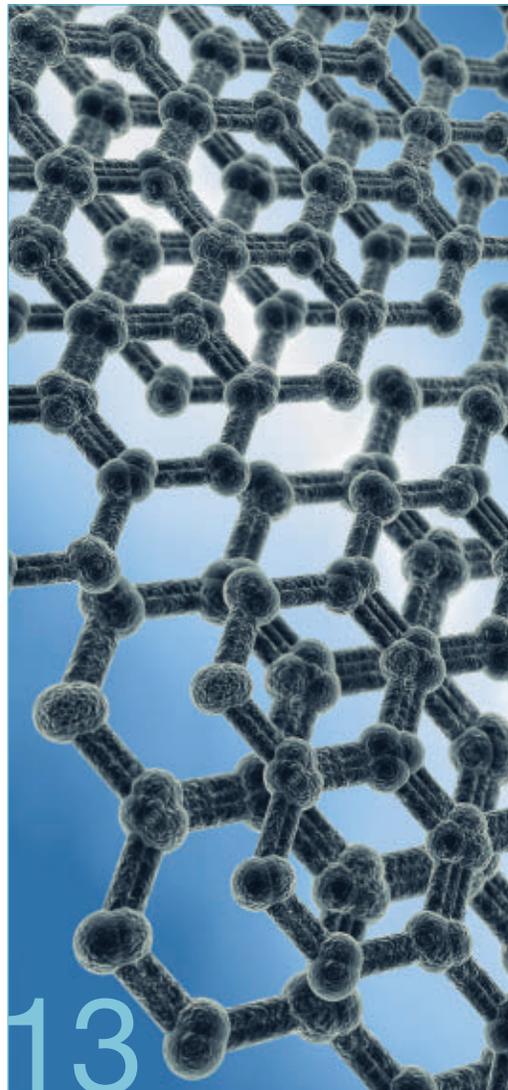
The Synergist (USPS #009-332) is published monthly except a combined June/July issue by the American Industrial Hygiene Association, 3141 Fairview Park Drive, Suite 777, Falls Church, VA 22042 for \$50 per year for members; non-members may subscribe for \$295/yr. International nonmembers may subscribe for \$395/yr (U.S. funds). Periodicals postage paid at Merrifield, Virginia, and additional mailing offices. POSTMASTER: Send address changes to *The Synergist*, American Industrial Hygiene Association, Attn: Customer Service, 3141 Fairview Park Drive, Suite 777, Falls Church, VA 22042. ISSN 10667660.

Publications Mail Agreement No. 40039445. Return undeliverable Canadian addresses to PO Box 503, RPO West Beaver Creek, Richmond Hill ON L4B 4R6.

Editorial Advisory Board Members
Jeff Behar, California Institute of Technology
Patricia Crawford, Consultant
M. Cathy Fehrenbacher, U.S. EPA
Don Garvey, 3M Co.
Stephen Hemperly, Hitachi GST
John Mazur, MACTEC Inc.
Hank Muranko, Muranko & Associates
Doris Reid, Goodrich Corporation
John Rekus, John F. Rekus & Associates Ltd.

Columns & Departments

- 8 Treasurer's Report**
Maintaining Balance
By Harry Beaulieu
- 10 Board Perspective**
Small Changes, Big Rewards
By Dianne Grote Adams
- 12 Letters**
Perspectives on ERAM
- 13 NewsWatch**
OEHS AND INDUSTRY NEWS
- 20 Insight: Risk Communication**
Motivating Attention
By Peter M. Sandman
- 22 Insight: Risk Assessment**
Closing the Exposure Gap
By Donna S. Heidel and Susan D. Ripple
- 33 Opportunities**
EDUCATIONAL EVENTS FOR OEHS PROFESSIONALS
- 34 Community**
AIHA NEWS
- 36 Product Features**
FOCUS: NOISE
- 37 Advertisers' Index/ Synergist Fax-Back Card**
- 38 Introductions**



Coming in May ■ Mining Health and Safety: New NIOSH Research ■ Hazards in Art Studios ■ The Expo at AIHce 2012

The Synergist's mission is to provide AIHA members with news and information about the occupational and environmental health and safety fields and the industrial hygiene profession. *The Synergist* focuses on industry trends and news, government and regulatory activities, key issues facing the profession, appropriate technical information and news on association events and activities.

The Synergist's objective is to present information that is newsworthy and of general interest in industrial hygiene. Opinions, claims, conclusions and positions expressed in this publication are the authors' or persons' quoted and do not necessarily reflect the opinions of the editors, AIHA or *The Synergist*.

When You're in a Tight Spot, You Can Count on Gastec.

BETTER TECHNOLOGY

Gastec's Automatic Counter Eliminates Miscounted Pump Strokes

The new Gastec Gas Sampling Pump GV-110 includes a built-in counter for tracking up to 10 pump strokes. Although over 85% of Gastec detector tubes require only 1 or 2 pump strokes, the automatic counter eliminates the risk of miscounting when using tubes that require additional strokes.

Manufactured in ISO-9001 certified facilities, the rugged pump is pre-calibrated and includes a lifetime warranty.

Gastec's One-Hand Adapter Lets You Sample Gases with the Push of a Button

Gastec's One-Hand Adapter converts the Gastec Gas Sampling Pump from one-stroke piston action to one-button operation. One-button/one-hand operation makes it perfect for sampling in awkward or hard-to-reach places, in confined spaces, or while standing on a ladder.

Gastec's complete line of pump accessories includes a telescoping extension pole, a hot probe, and 5-meter and 10-meter extension hoses.

Gastec pumps, accessories, and detector tubes are designed, manufactured, and calibrated to work together, so you can count on accurate measurements.

NEXTTEQ[®]
BETTER TECHNOLOGY. BETTER QUALITY.
BETTER VALUE.

For more information: NEXTTEQ LLC
Toll-free: 877-312-2333 • Email: info@nextteq.com
www.nextteq.com



Scan to access
additional information
on the Gastec
GV-110 Pump.

GAS DETECTION

ON-THE-SPOT AMBIENT TEMPERATURE DISPLAY

Increases safety and reduces risk by enabling you to accurately correct for temperature changes on-the-spot.

AUTOMATIC STROKE COUNTER

Tracks up to 10 pump strokes automatically so there is no chance of miscounting.

FLOW FINISH INDICATOR

Ensures precise sample volumes by displaying when a 50 ml or 100 ml stroke is complete.

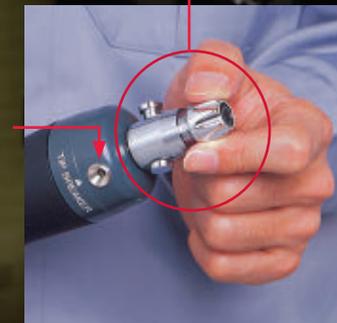
ONE-HAND ADAPTER

Enables you to operate the pump with the push of a button, freeing you to reach into tight spaces with one hand or hold onto a ladder.

TUBE TIP BREAKER

Has a diamond cutting edge for maximum durability. Discarded tips are deposited in a storage bin for safe and easy disposal.

Circle Fax-back Card No. 4



Gastec tubes and pumps are manufactured by Gastec Corporation. Nextteq is Gastec's exclusive U.S. master wholesale distributor.

Treasurer's Report

Maintaining Balance

BY HARRY BEAULIEU, AIHA® TREASURER



It's a balancing act to make good business and financial decisions for AIHA while remembering that providing membership services is our primary duty. However, another duty is to adapt our association to the AIHA of future years.

We are financially strong by many measures, but we still must be prudent in how we allocate resources. Our 2012 operating budget is \$14.6M. With a staff of 50 full-time equivalents (FTEs) who support hundreds of programs, our operating budget is pushed to its limits, but the staff keep working very efficiently, effectively and professionally. We operate with lower overhead expenses, and our revenue generated per FTE is much higher than comparable associations.

Because our revenue is driven chiefly by AIHce and our Accreditation and Proficiency Analytical Testing (PAT) programs, we can keep our dues at a very low level and provide an extremely good comparative value. Dues comprise only 11 percent of our revenue; on average, similar associations rely on dues for approximately 24 percent of revenue. And our new office space has reduced our rent expenses dramatically while maintaining a professional setting that you will be proud of.

Good Business Practice

Consistent with good business practice, we are committed to keeping our invested reserves equal to 50 percent of our operating budget. We have over \$12M "in the bank" with a 50/50 balance between long- and intermediate-term investments. You might ask, why do we need reserves?

First, we need reserves to manage natural swings in cash flow. In October, for example, we have limited cash inflow and large outflows related to AIHce, which results in our lowest investment balance of the year. February is our highest investment balance because of AIHce registrations and revenues from our Accreditation, PAT and Registry programs. Our intermediate-term reserves help us modulate those swings while our long-term investments generate revenue.

Second, reserves allow us to make good long-term strategic decisions. When we are not worried about paying bills and making payroll, we can carefully evaluate everything we do and allocate resources with AIHA's long-term future in mind. Success in business comes from focusing on the things you are really good at. Our Board of Directors has made some very tough decisions over the past two years that some members take issue with. For example, the decision to pull AIHA away from the WEEL and BEEL activities was not taken lightly. Ultimately it was the right decision, and those programs have a new, bright future.

Third, with strong reserves we can take advantage of unexpected opportunities. For example, we can support good ideas from members, such as the Value Strategy program, with our "Invested Reserves above Target" (IRAT) policy. Our 2012 budget includes almost \$400,000 in IRAT funding for the second-year Asia Pacific Conference, Registry program development and PAT product development. We have also approved proposals to explore the Southeast Asia market for possible expansion of our Laboratory

Accreditation program and investigate a product stewardship membership group.

Finally, we need reserves so that our staff has a reasonable budget with which to execute the strategic plan set forth by the Board of Directors.

Positive Budget, Quality Services

Although we began the last two years with slight deficit budgets, our reserves allowed us to continue operations and provide strong member services, and we finished both years in the black. This year we will operate (as we should) with a slight positive delta. Because of our senior management team's attention to the details of projected revenues and expenses, we will be operating within our means while maintaining quality services for members.

Thanks to the financial stewardship of Treasurers before me, including Mike Brandt, Lindsay Booher, Dave Gioiello and Allan Fleeger, our Board of Directors achieved the optimal balance of expenses and member services. And when my term as Treasurer ends in June 2012, the stewardship of our finances will be in the very able hands of Steve Lacey, our Treasurer-Elect.

It's all about balance: without the worry of fiscal issues, the Board can address the changing needs of current and future members. 🤝

Harry Beaulieu, PhD, CIH, CSP, is president and senior scientist at Industrial Hygiene Resources in Boise, Idaho. He can be reached at harrybeaulieu@industrialhygieneresources.com or (208) 323-8287.

No Free Badges
(or free lunches)

Just the
Best Overall
Value

Technology Leader offering
the most Cost-Effective & Convenient

Personal Monitoring Badges

Pre-Paid Lab Analysis AIHA-LAP, LLC accredited (#101728, 100903)

Aldehyde

\$212 for 5 = \$42.40 per test

Organic Vapor

\$195 for 5 = \$39.00 per test

Additional 10% off Internet Orders

Respirator Cartridge Test
Equipment and Lab Services



Along with Miller-Nelson Instruments, we offer
Chemical Challenge Testing Services for air-purifying
respirators, featuring the broadest range of challenge
agents of any provider.

**assay
technology**

www.assaytech.com

1(800) 833-1258

Highest Sample Capacity

Highest Sampling Rate

AT Labs a unit of assay technology

Circle Fax-back Card No. 5

Board Perspective

Small Changes, Big Rewards

BY DIANNE GROTE ADAMS, AIHA® DIRECTOR



It's hard to believe, but at AIHce in Indianapolis I will have been on the Board for one year! Some have likened the first-year experience to drinking from a fire hose. While I've sometimes felt overwhelmed, I've also acquired valuable knowledge and experience in these short twelve months. I've been challenged by well-educated peers, I've gotten to know some individuals I might not have met otherwise and I've acquired skills that I can apply to my paying job. As I approach my one-year anniversary on the Board, I'd like to share a few thoughts that will serve me well not only during the rest of my term but throughout my career.

Make It Personal

Each of us chooses to become involved with AIHA for primarily one of three reasons: to network, to learn or to give back. Whatever your motivations for getting involved, you want to feel welcomed. As an introvert, I'm encouraged by invitations to participate or by welcoming smiles from group members. I enjoy attending our local section meetings because, after 30 years, I know many of the participants, and at the meetings I can learn what they're working on and how their families are doing. In other words, having a personal stake in my volunteer work has made it more meaningful.

This year, after reflecting on the reasons members get involved, as well as my personal experiences at local section meetings, I decided that I would invite one new person as my guest to each local section meeting. I try to find out what their interests are and how at-

tending might be of value to them. This small time commitment could lead to big rewards—imagine how much positive energy and strength we could generate for AIHA if half our members personally invited just one person to each event.

Divide and Conquer

Leadership Workshop is an annual event that helps AIHA volunteers develop leadership skills. One suggestion at last year's Workshop was to divide volunteer tasks into smaller time commitments.

Having a personal stake in my volunteer work has made it more meaningful.

I've used this concept at work and in my volunteer role. We often have new projects that seem daunting; however, if each member of the team takes on smaller tasks, the project moves forward and no longer feels difficult. For example, I've found that inviting one guest to a meeting is a more palatable task than focusing on an overall goal of increasing attendance or membership.

In the volunteer realm, new local section members may hesitate to commit to serving as an officer, but perhaps

they're willing to make nametags or be a greeter at a meeting. These smaller roles reduce the burden on the current officer and allow new members to contribute. This "divide and conquer" approach can help us use smaller building blocks or take shorter steps to achieve our goals at work, at home and in our volunteer commitments.

Welcome Change

Like many organizations, AIHA has looked inward during the past few years and made changes to be more competitive. At home and at work, we're all challenged by changes not within our control. However, we can control how we respond to those changes. A natural response for many of us is to put our heads down and work harder. Yet for most of us, that won't be a long-term solution.

To make time for my Board activities, I made some changes at work and at home. It was difficult on both fronts, but the changes have been positive, and I wouldn't have made them without my Board commitment. As you approach job assignments, local section meetings and the upcoming conference, think about how you can make it personal, divide and conquer and welcome change. You, your peers and your profession will all benefit. 🙌

Dianne Grote Adams, CIH, CSP, CPEA, is president of Safex, Inc. in Westerville, Ohio, a past chair of AIHA's Local Section Council, and a member of the AIHA Board of Directors. She can be reached at (614) 890-0800 or dgroteadams@safex.us.



Comfort. Confidence. Reliability. Quality.

3M ranked as a
top U.S. Most
Reputable Company*

Beyond the Transaction

When you purchase a 3M disposable filtering facepiece respirator in the U.S., you also receive exceptional technical service and regulatory support from the company that actually makes the respirator.

3M support goes beyond the transaction.

To learn more about 3M and some of the people who help provide our technical and regulatory support, go to:

www.3M.com/The3MDifference.



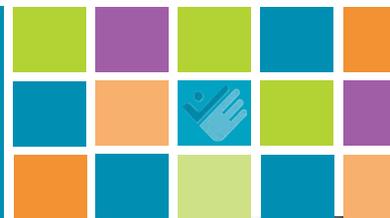
Learn more about
how we develop our
respirators.

The power to protect your world.SM

*Forbes/Reputation Institute 2011 U.S. RepTrak™ Pulse Study

© 3M 2012. All rights reserved.
3M and The power to protect your world are trademarks
and service marks of 3M Company, used under license in Canada.





Washington Insider

Except for GHS, Little Movement in Washington

By Aaron Tripler, Director, AIHA® Government Affairs



OSHA fulfilled a long-standing promise when it issued the final rule updating its Hazard Communication Standard (HCS) on March 26. The revised standard is in alignment with the United Nations' Globally Harmonized System of Classification and Labeling of Chemicals (GHS). GHS outlines a single set of harmonized criteria for classifying chemicals according to their hazards, and creates standardized wording, pictures and labeling for all future Safety Data Sheets (SDSs) so that employers and employees have the same information wherever chemicals are manufactured or used.

Two major parts of GHS raise concerns with some in industry and business:

Unclassified Hazards. The U.S. version of GHS includes a new section titled "Hazards Not Otherwise Classified" for chemicals that do not fall

under any existing hazard classes. Opponents of this addition were concerned that this would include coverage of combustible dust, and are worried this section will allow OSHA to use this new classification for similar issues.

Inclusion of the Threshold Limit Values (TLVs®). TLVs® were included under the previous HCS, and some in industry and business wanted TLVs® to be removed from SDSs. However, OSHA left this requirement in the updated standard.

The big concern now is what those opposed to the final rule will do next. Don't be surprised if a lawsuit is filed with the intention of delaying or stopping implementation of the rule. This seems to be the modus operandi of opponents on all sides of every issue here in Washington. I don't expect the GHS to be any different.

Injury and Illness Prevention Program (I2P2)

OSHA was supposed to have held a Small Business Advocacy Review panel to review a proposed I2P2 sometime in March.

Now OSHA has announced that the panel will be delayed for some time—many think until after the election. This remains to be seen, but don't let anyone tell you that this delay isn't related to politics. It is looming on the top page of the proposal.

I2P2 has raised considerable concern from some in industry and business since it was first proposed. No one has seen an actual written proposal, and yet the opposition has continued to build. In a recent hearing before Congress, some in the GOP not only criticized the proposal but threatened to use the Congress-

sional Review Act to kill it if it is ever finalized.

Bottom line: Don't expect to see anything for several months, perhaps not until after the election. If the president is re-elected, the proposal will move forward and Congress will likely get involved. If the GOP takes control of the White House, you won't even be able to find a copy of the proposal, as it will be killed and buried within OSHA.

NIOSH and ERC Funding

Supporters of continued funding of NIOSH's Education and Research Centers (ERCs) and its Agriculture, Forestry and Fishing (AFF) sector are gearing up for a tough fight with Congress and the administration.

The president has proposed slashing all funding for these programs, saying they "are a low priority." In addition, the GOP is in the process of adopting its own budget, which includes a considerable amount of federal spending cuts. It's a good bet that these two programs are targeted.

AIHA supports the continued funding of these programs. AIHA, many AIHA local sections and other organizations have signed a letter to be sent to members of Congress in

support of the programs. AIHA also submitted written testimony for the record at a recent House hearing on appropriations, and will be sending its own letter to a select group of members of Congress. AIHA will provide its members with opportunities to contact elected officials to either support or oppose the programs.

Speaking of federal spending, Republicans in the House have stated opposition to the president's proposed OSHA budget for FY 2013. Don't worry just yet; this is the beginning of the debate, and there's a long way to go.

Employer Incentive and Disincentive Practices

I don't doubt that some employers provide incentives to employees if no injuries or illnesses are reported. Several government studies have concluded that this is a concern with some employers, so OSHA issued a memorandum to regional administrators and whistleblower program managers on March 12. This memorandum is intended to provide guidance in assisting field compliance officers and whistleblower investigative staff. The memorandum does provide guidance; however, some in business and industry believe

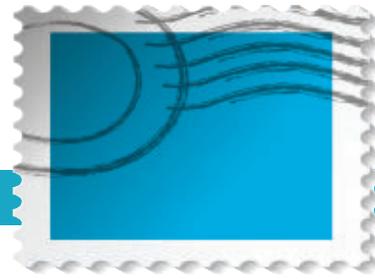
the memorandum allows OSHA too much power in this area.

For example, one situation cited was where an employee reports an injury, and the employer imposes discipline on the employee because the employee was in violation of a safety or health rule. Is the employer imposing discipline because a report was filed or that the employee violated the rule? And what enforcement would OSHA impose?

The bottom line is this: I expect there to be a lawsuit over the memorandum. We might see the lawsuit filed over the content of the memorandum, as well as the fact that OSHA is attempting to impose enforcement through "memorandum" and "guidance" rather than rulemaking. Remember, there was legislation introduced in Congress to require OSHA to treat guidance documents like rulemaking and therefore follow those procedures. I doubt that it will pass, but it sure shows that there is plenty of concern about these "guidance" issues.

Aaron Trippler directs government affairs for more than 70 local sections and serves as AIHA's chief liaison with Congress and federal agencies. He can be reached at (703) 846-0730 or atrippler@aiha.org.

Letters



Dear Editor,

Perusing the December *Synergist's* "Board Perspective" column ("Creating the Future through Risk Management" by Charles Redinger) on exposure risk assessment and management (ERAM), I read that as industrial hygienists we have "mature practices and standards that can be leveraged to accelerate the application of risk management principles to enterprise issues."

ERAM is a dog that won't hunt. Instead of a "powerful platform upon which our traditional discipline can continue evolving," it looks more like a confusing risk assessment program.

One of the core values in the AIHA 2011–2015 Strategic Plan is to prevent illness and injuries. ERAM may postpone illness and injury prevention if economic considerations have more weight in the front office.

Chapter 7 of the new White Book stresses dedication to anticipation, recognition, evaluation and control of hazards arising in the workplace. Control of those hazards should be our mantra, not management of the risks that some corporate-level administrator has associated with those hazards. As industrial hygienists, we find things that need fixin' and get 'em fixed. We don't find things that need fixin' and then, perhaps over a few martinis in the executive suite, decide, well, if it isn't fixed, what's going to happen, how bad will that be, and who's going to know?

Chris Jones
Head, Industrial Hygiene Department
Naval Medical Center Portsmouth
Portsmouth, Virginia

Redinger responds:

Thank you for the feedback! It is welcome and valuable.

To suggest that ERAM is a "dog that won't hunt" reflects a narrow view of our profession. We have been using the principles that underlie ERAM since our earliest days. It is the foundation upon which we do what we do.

ERAM is an advancement on these principles that evolved out of AIHA's recent five-year strategic planning process. The AIHA Board, along with the Academy and ABIH leadership, participated in this endeavor. A project team has been formed to explore ways ERAM can be applied within AIHA and throughout the IH profession. This project team comprises a wide range of AIHA committees and their leadership; some of our profession's top minds have been involved.

Industrial hygiene remains essential in public health and worker protection paradigms, but there is a reality that the narrow practice of IH has diminished and many IHS perform activities well beyond traditional ones. This trend is also reflected in undergraduate and graduate IH programs. In his September 2010 President's Message, AIHA President Michael T. Brandt summed up this changing nature and challenged readers: "The discipline of industrial hygiene is changing; we need to embrace the changes while preserving our core competencies. The scientific and technical competencies each of us developed through our academic study have prepared us to practice in a wide array of work activities."

A driver of the ERAM discussion is to clarify the "core" of the IH profession. Using ERAM as a filter and context allows us to focus resources; identify areas where our expertise can make a larger contribution in workplace health and safety; strengthen our profession; and build relationships with other professions.

With the utmost respect, I think it trivializes our profession to suggest we only find things that need "fixin'." Those are just the baseline. Where we truly make a difference is when we go beyond that bare minimum to improve living and working conditions.

The White Book has an entire section, reinforced by 13 chapters, on the centrality of management to the execution of IH programs and systems. Chapter 7 addresses the "general practice of evaluating worker exposures in the industrial environment." It says that the IH hierarchy—anticipation, recognition, evaluation, and control—"suggests a sequence for occupational hygiene decision making process." This points to a management process and does not exclude or minimize the importance of managing risks.

Charles Redinger
AIHA Director
President, Redinger EHS
Harvard, Massachusetts

The opinions expressed in letters to the editor are those of the authors and do not necessarily reflect the views of AIHA® or *The Synergist*®. *The Synergist* reserves the right not to publish letters and to edit letters for space and clarity. Letters that include inappropriate personal comments will not be published. To preclude a single discussion from dominating the letters page, replies to letters will be posted on the *Synergist* blog, www.aiha.org/synergistblog.

NewsWatch

OEHS NEWS ■ GOVERNMENT NEWS ■ INDUSTRY NEWS

CRYSTALLINE SILICA

Crystalline Silica Rule at a Standstill

In a Jan. 25 letter to President Obama, the Union of Concerned Scientists (UCS), a science-based nonprofit, joined others in urging action against the delay facing OSHA's Occupational Exposure to Crystalline Silica proposed rule at the Office of Management and Budget (OMB). Over 300 public health scientists, occupational safety experts and doctors signed a letter to the president stating their concerns over OMB's year-plus hold on the rule, which they say leaves workers in danger while preventing public participation in the rulemaking process. OMB is required to complete review of proposed rules within 90 days; however, OMB has delayed review since its receipt of the proposal on Feb. 14, 2011. The letter urges the president to direct OMB to complete review of the rule so that it can move forward.

Last November, AIHA wrote the director of OMB expressing concern over the delay in the rulemaking process. The letter urged OMB to release the rule so that OSHA can continue working toward a finalized standard for crystalline silica. In de-



velopment for 14 years, OSHA's proposed silica rule appears on the agency's regulatory agenda released Jan. 20. A notice of proposed rulemaking (NPRM) was scheduled for February 2012, but was not published.

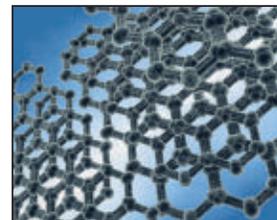
According to a NIOSH Hazard Review from April 2002 (<http://1.usa.gov/nioshhazardreview>), an estimated 1.7 million workers are exposed to crystalline silica in the U.S. A 2003, report (<http://bit.ly/ajimreport>) estimated there were between 3,600 and 7,300 new cases of silicosis—lung disease caused by inhalation of crystalline silica dust—per year from 1987 to 1996.

Read the UCS letter at <http://bit.ly/obamaletteronsilica>. More information about the proposed rule is available from the OMB website at <http://bit.ly/silicaproposedrule>. To read OSHA's regulatory agenda, visit <http://1.usa.gov/OSHAregagenda>. AIHA's letter to OMB is available at <http://bit.ly/aihaletteromb>.

NANOMATERIALS

National Research Council: More Nanomaterials Research Needed

A new report from the National Research Council outlines a strategic approach for addressing potential risks to health, safety and the environment related to the use of nanomaterials. The report discusses the need for the development of research and scientific infrastructure around the field of nanotechnology, and summarizes four research categories that the Council believes should be addressed within five years:



- identify and quantify the nanomaterials being released and the populations and environments being exposed
- understand processes that affect potential hazards and exposure
- examine nanomaterial interactions in complex systems ranging from subcellular to ecosystems
- support an adaptive research and knowledge infrastructure for accelerating progress and providing rapid feedback to advance research

The full report is available at <http://bit.ly/researchstrategyfulltext>.

OVERTIME WORK

Long Work Hours Lead to Increased Depression Risk

A study published in *PLoS ONE* on Jan. 25 suggests that a significant connection exists between working long hours and increased risk of depression. Researchers led by Marianna Virtanen of the Finnish Institute of Occupational Health followed a total of 2,123 British civil servants for an average of 5.8 years as part of this study. Fifty-two percent worked 7 to 8 hours per day, 21 percent worked 9 hours per day, 16 percent worked 10 hours per day and 11 percent worked from 11 to 12



Online Synergist

Visit www.aiha.org/SynergistNewsWatch
to read more industry news.



Visit us at
AIHce 2012
Booth #448

Industrial or Environmental Noise Problems?

Kinetics Noise Control has the engineering expertise and manufacturing capabilities to meet your in-plant and environmental airborne noise and vibration control needs!

- Sound Curtains
- Barrier Wall Systems
- Vibration Isolation
- Seismic Restraint
- Ventilation Silencers
- Hanging Baffle Absorbers
- NOISEBLOCK™ Enclosures
- Barrier/Absorber Rolled Goods



Over 50 years of Manufacturing and Engineering Excellence

www.kineticsnoise.com | 800-959-1229 | industrialsales@kineticsnoise.com

Circle Fax-back Card No. 7

DEPARTMENT | NEWSWATCH

hours each day. Age and pervasiveness of chronic physical disease did not differ among the groups.

Ultimately, researchers found that workers putting in 11 or more hours a day could have a 2.3- to 2.5-fold increased risk of a major depressive episode than those who worked a normal day (7 to 8 hours). The results also took into account lifestyle, sociodemographics and other work-related factors.

Read the full research article on *PLoS ONE*'s website at <http://bit.ly/ploslongworkhours>.

Virtanen recently discussed her research on Safe & Sound, AIHA's Internet radio show. To listen to the show, go to <http://bit.ly/episode105workinglonghours>. For access to other episodes, visit <http://bit.ly/aihasafeandsound>.

TSA SCANNERS

New Legislation Targets Airport Scanner Safety

In January, new legislation regarding the safety of airport scanners was introduced by members of the Senate Committee on Homeland Security and Governmental Affairs. The legislation would require the Department of Homeland Security's Science and Technology Directorate to commission an independent study on the possible health effects caused by the X-ray radiation produced by some airport scanning machines. The study would be conducted in consultation with the National Science Foundation (NSF). In addition, the bill would

Introducing . . . the OHD QUANTIFIT®

THE NEW GOLD STANDARD IN
RESPIRATOR FIT TESTING

OCCUPATIONAL HEALTH DYNAMICS
OHD



Trade in your old
fit test equipment!

Eliminates the need to probe the facepiece!

- ▶ 2-3 minute respirator fit testing
- ▶ On-board data storage
- ▶ USB keyboard and printer connection
- ▶ So easy to use that the subject can test himself
- ▶ USB thumb-drive storage and data transfer
- ▶ USB Computer interface with included software
- ▶ Firmware upgrades and improvements may be downloaded from the internet
- ▶ Easy-to-read backlit display
- ▶ Optical knob for easier menu navigation
- ▶ More audio feedback during testing

www.ohdusa.com • 888.464.3872

Circle Fax-back Card No. 8

require signs that clearly inform travelers of alternative screening options.

“Protecting public health and safety means we must provide safe and secure air travel and also make sure that the public has confidence that our security efforts don’t have unintended consequences,” said Senator Carl Levin, one of the bill’s cosponsors.

For more information, visit the Over-



sight of Government Management Subcommittee’s media website at <http://bit.ly/airportscannerlegislation>.

COMBUSTIBLE DUST

CSB Chair Renews Call for Combustible Dust Standard

The head of the Chemical Safety and Hazard Investigation Board (CSB) has called for OSHA to move forward with a combustible dust standard for general industry. The statement from CSB Chair Rafael Moure-Eraso, CIH, was issued the day before the fourth anniversary of the fatal explosion at the Imperial Sugar Refinery in Port Wentworth, Ga., which killed 14 workers and injured 38. CSB found that the buildup of highly combustible sugar dust and granulated sugar in the refinery was to blame for the accident and that proper dust collection and sugar-handling equipment and good housekeeping practices could have prevented the explosion.

The development of a combustible dust standard is the only one of the recommendations from CSB’s investigation of the accident that has yet to be adopted. “We believe such a standard is necessary to reduce or eliminate hazards from fires and explosions from a wide variety of combustible powders and dust,” Moure-Eraso said.

Moure-Eraso also commended the organizations that took action to address

CSB’s recommendations following its investigation.

Recently, CSB reissued its recommendation for a dust standard following its investigation into the accidents that occurred at the Hoeganaes iron powder plant in Tennessee last year. Moure-Eraso noted that OSHA lowered the priority of

CSB’s recommendation in OSHA’s regulatory agenda published in February.

View the chairman’s full statement at <http://1.usa.gov/csstatementfeb6>. More information on CSB’s investigation into the Imperial Sugar dust explosion is available at <http://1.usa.gov/csbimperial>. See OSHA’s regulatory agenda at <http://1.usa.gov/OSHAregagenda>.

SKC

AirChek® XR5000

As Good As Gold

The SKC AirChek XR5000 Sample Pump is as good as gold when you need a powerful, reliable 5 L/min constant flow pump for extended sampling runs.

- Flows from 5 ml/min to 5 L/min
- ≥ 20-hour run times
- Li-Ion and alkaline battery options
- Supercharged for high back pressures
- Automatic fault features
- Timed start and delayed run features
- Standard model weighs only 16 ounces

Going for Gold Approaching 50th Year

Call 800-752-8472 or visit us at www.skccinc.com.




Circle Fax-back Card No. 9

UMDNJ
SCHOOL OF PUBLIC HEALTH
University of Medicine & Dentistry of New Jersey
Office of Public Health Practice
Health Practice
Centers for Education & Training

Online Catalog Available NOW! Browse Register Pay

Asbestos
CAOHC Hearing
Ergonomics
Hazardous Materials
Indoor Air Quality
Industrial Hygiene
Lead Safety
Mold Sampling
NIOSH Spirometry
OSHA 500, 501, 502, 503, etc....
Respirator Program Administration
Toxicology

Located in Central New Jersey

VISA MasterCard

online: <http://ophp.umdnj.edu>
Phone: 732.235.9450 Fax: 732.235.9460

Circle Fax-back Card No. 10

RAECO Rents

www.RAECO.com
Daily, weekly, and monthly rentals.

TS QUEST THE SYSTEM SOLUTION! ion testo
SENSIDYNE Honeywell
MSA The Safety Company PHOTOVAC, Inc. BW Technologies by Honeywell

Your one-stop rental source for...

- Respirator fit testing systems
- Air monitoring and sampling pumps
- Combustion efficiency analyzers
- Gas detection and monitoring
- HVAC and ventilation test instruments
- Indoor air quality monitoring
- Particulate monitoring
- Sound and noise level monitoring

See our website for the full list

Save an automatic 5% when you rent at www.RAECO.com!

Need help with your rentals?
Call 866-RENT-EHS (866-736-8347)

New instrumentation catalog!
Get yours at www.RAECO.com

Circle Fax-back Card No. 11

DEPARTMENT | NEWSWATCH

PERC

EPA: Final Health Assessment for Tetrachloroethylene

EPA's final health assessment for tetrachloroethylene, released Feb. 10, labels the chemical as a "likely human carcinogen." Tetrachloroethylene, also known as perchloroethylene or perc, is widely used as a chemical solvent in the dry cleaning industry, and is also used to clean metal machinery and in the manufacture of other products and chemicals.

According to an EPA press release, the agency's clean air standards will require dry cleaners to phase out the use of perc in residential buildings by the end of 2020. In addition, EPA set limits on the amount of perc allowed in drinking water and levels for cleaning up perc at hazardous waste sites across the U.S. The new assessment replaces the 1988 Integrated Risk Information System (IRIS) assessment and includes a hazard characterization for cancer effects.

EPA's assessment of perc is in line with other agencies' findings. The National Toxicology Program (NTP) 2011 Report on Carcinogens lists perc as "reasonably anticipated to be a human carcinogen," and the International Agency on Cancer (IARC) classifies perc as "probably carcinogenic to humans." See NTP's report at <http://1.usa.gov/ntpperc>, or read IARC's report at <http://bit.ly/iarcperc>.

View EPA's final assessment for perc at <http://1.usa.gov/epaperassessment>. Read the press release from EPA at <http://1.usa.gov/epareleasefeb10>. Find out more about perc on the EPA fact sheet at <http://1.usa.gov/percfactsheet>, or more about IRIS on the database homepage at www.epa.gov/IRIS.

Research Roundup

New study results show that rotating night shift work increases the risk of type 2 diabetes in women. Published in *PLoS Medicine*, the study suggests that proper screening and intervention strategies are needed to prevent diabetes in rotating night shift workers. ("Rotating Night Shift Work and Risk of Type 2 Diabetes: Two Prospective Cohort Studies in Women," <http://bit.ly/shiftworkdiabetes>).

New research on hydraulic fracturing ("fracking") finds that natural-gas producers in the Denver-Julesburg Basin are losing about 4 percent of natural gas to the atmosphere. A study led by researchers at the National Oceanic and Atmospheric Administration (NOAA) and the University of Colorado, Boulder researches natural gas and air pollution. ("Air sampling reveals high emissions from gas field," <http://bit.ly/airsamplinggasfield>).

Higher blood levels of cadmium in females and higher blood levels of lead in males may delay pregnancy in couples trying to conceive, according to a study by researchers at NIH and other institutions ("Heavy metals and couple fecundity, the LIFE Study," <http://bit.ly/cadmiumleadpregnancy>).

Recent research shows that models used by federal regulators may significantly underestimate the quantity of secondary organic aerosols in the atmosphere and misjudge the particles' effect on public health. The research was led by scientists at the University of California, Irvine and the Pacific Northwest National Laboratory and published in the *Proceedings of the National Academy of Sciences*. ("Nonequilibrium atmospheric secondary organic aerosol formation and growth," abstract available at <http://bit.ly/organicaerosols>).

Coal-tar-based sealants, commonly used to seal pavement, are emitting polycyclic aromatic hydrocarbons (PAHs) into the air at rates that could be higher than annual emissions from vehicles in the U.S. According to four new reports by the U.S. Geological Survey, dust from pavement with a coal-tar-based sealcoat has PAH concentrations hundreds to thousands of times higher than dust from pavement that has not been sealed or has been sealed with an asphalt-based product. ("PAHs and Coal-Tar-Based Pavement Sealcoat," <http://on.doi.gov/pahscoaltar>).

DERMAL SAMPLING

ASTM International Publishes Selected Technical Papers on Surface and Dermal Sampling

In February, ASTM International announced the publication of STP 1533, *Surface and Dermal Sampling*, a compilation of 20 peer-reviewed papers that feature the latest research available on surface and dermal sampling to assess contamination levels and detect harmful agents. The technical papers cover sampling techniques, analytical measurement technologies, reference materials, standardization, occupational hygiene, decontamination methods and quality assurance.

Other topics discussed include lead, beryllium, asbestos and pharmaceuticals. A PDF overview of the papers is available at <http://bit.ly/dermalsamplingoverview>.

PUBLIC HEALTH

New National Academies Publications Available

The National Academies Press (NAP) recently released two books as free, downloadable PDFs:

Living Well with Chronic Illness: A Call for Public Health Action tackles chronic disease as a significant problem in the United States and addresses population-based public health actions to reduce disability as well as improve functioning and quality of life

Gasmeter™
Advanced Solutions for Gas Monitoring.

IDENTIFY MEASURE ASSESS TOXIC GASES

WITH THE NEW GENERATION DX4040 PORTABLE FTIR GAS ANALYZER

- Identification of unknown gases
- Measures 25 gases simultaneously
- Wireless transmission of gas concentrations (WiFi, 3G)
- User selectable reference library includes 237 gases

Gasmeter Technologies inc
866-685-0050 sales@gasmeter.com
www.gasmeter.com

Circle Fax-back Card No. 12

Introducing
Gas-Pro

The gas monitor perfectly designed for Confined Spaces



www.crowcon.us



Circle Fax-back Card No. 13

for those most at risk of developing a chronic disease. Read online at <http://bit.ly/naslivingwell>.

Information Sharing and Collaboration: Applications to Integrated Biosurveillance: Workshop Summary is a report on the Institute of Medicine's workshop held to deliberate how information sharing and collaboration can be best applied to strengthen the nation's integrated biosurveillance strategy, which deals with national security health threats. Read online at <http://bit.ly/informationsharing>.

The books are also available to view on the AIHA website at <http://bit.ly/aihaacademiespublications>.

METHYLENE CHLORIDE

CDC: Risk of Fatal Exposure to Methylene Chloride in Bathtub Refinishing

The Centers for Disease Control and Prevention's (CDC) *Morbidity and Mortality Weekly Report* (MMWR) for Feb. 24 strongly recommends that employers consider alternatives to

The Ultimate PAPP Just Got Better!

- No Backpack or Hoses
- 7-hour Battery Life
- APF 1000

Quick Release Headband Diagram

INTERACTIVE SAFETY PRODUCTS INC
800 251 7377
sales@helmetssystem.com
www.helmetssystem.com

INTERACTIVE SAFETY PRODUCTS

Circle Fax-back Card No.14

April JOEH

The April issue of the *Journal of Occupational and Environmental Hygiene (JOEH)* features the following articles:

- Lead Exposures from Varnished Floor Refinishing
- Personal Exposure to PM2.5 and Urinary Hydroxy-PAH Levels in Bus Drivers Exposed to Traffic Exhaust, in Trujillo, Peru
- The Development and Validation of an Assay for the Quantification of the *P. chrysogenum* allergen Pch52
- Effect of Training on Exposure Judgment Accuracy of Industrial Hygienists
- Cortisol and Interleukin-6 Responses During Intermittent Exercise in Two Different Hot Environments with Equivalent WBGT
- Cohort Mortality Study of Roofing Granule Mine and Mill Workers. Part I: Estimation of Historical Crystalline Silica Exposures
- Cohort Mortality Study of Roofing Granule Mine and Mill Workers. Part II: Epidemiologic Analysis, 1945–2004
- A Novel Strategy for Retrospective Exposure Assessment in the Norwegian Silicon Carbide Industry

AIHA members can access the full texts of *JOEH* articles through the Member Center on www.aiha.org, as well as the full-text archives of AIHA journals from 1940 to 2003. Full-text archives of *Applied Occupational and Environmental Hygiene* from 1986 to 2003 are also available.

the use of methylene chloride stripping agents for bathtub refinishing. According to the report, 12 methylene-chloride-related deaths associated with professional bathtub refinishing operations occurred in the U.S. from 2000 to 2011. All the deaths occurred in residential bathrooms with poor or no ventilation. In addition, the refinishers did not use respirators or other protective equipment. In six of the cases, toxicology tests found methylene chloride blood levels from 18 to 223 mg/L. OSHA's allowable air standard for exposure to methylene chloride fumes is <2 mg/L.

Methylene chloride is a volatile, toxic, organic solvent used in cleaning and paint stripping. According to the National Toxicology Program (NTP), methylene chloride is "reasonably anticipated to be a human carcinogen" (<http://1.usa.gov/ntp-methylenechloride>). It has already been identified as potentially fatal to furniture strippers and factory workers but has not been previously identified as a cause of death among bathtub refinishers.

Stripping products containing methylene chloride are widely available to professional bathtub refinishers but can also be purchased online or in hardware stores. CDC calls for the hazards of using methylene chloride-based products in bathtub refinishing to be communicated to employers, workers and consumers.

The MMWR report is available at <http://1.usa.gov/mmwr-methylenechloride>. 



DEDICATED TO YOUR SUCCESS! Certification Exam Review Courses

- ▶ 4-Day Workshops
 - ▶ Live Lectures Online
 - ▶ Convenient Class Times
 - ▶ Earn BCSP and ABIH Points
 - ▶ Premium Access to our Member Center
- Come see us
at AIHce 2012
Booth #1020*

Bowen EHS, Inc.

Professional Development for Health & Safety Experts since 2003.

www.BowenEHS.com

Circle Fax-back Card No. 15



Our Services

- Same Day analysis for:
Spore Traps, Tape Submission,
and Direct Examination of
Swabs
- Complete microbial and
fungal identification of
Bioaerosols, Wipes, Bulks
Contact Plates, & Biotest
Air Sample Strips
- Water & Wastewater testing
Including Biosolids
- Legionella detection by Culture,
Serotype & Real Time PCR



Our Lab

- We are a Full Service
Microbiology Laboratory
- Founded in 1993
- AIHA-LAP, LLC (#102747)
- Saturday hours
- Competitive Pricing
- ISO/IEC 17025:2005
- DUNS # 841145295
- Cage Code/CCR # 5 DEPO
- NAICS # 541380

Our People

- Board Certified Microbiologists
- Ph.D. Mycologists
- Ph.D. Lab Director
- Dedicated, trained and
customer oriented
support staff



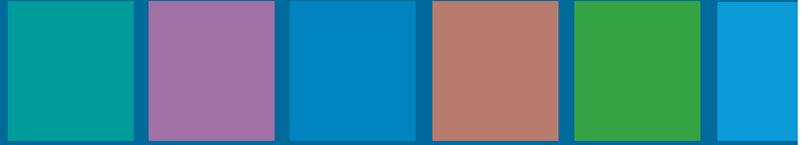
Pure Earth Environmental Laboratory

Celebrating our 17th year of Quality Service

866.486.1177 | www.pureearthlab.com | info@pureearthlab.com



Circle Fax-back Card No. 16



RISK COMMUNICATION

Motivating Attention

Why People Learn about Risk ... or Anything Else

BY PETER M. SANDMAN

Face it: A lot of risk information is boring. Safety information can be more boring still. “Seven things to check before you walk down stairs”? Give me a break!

That’s probably not how you feel; risk and safety are what you do. And that’s not how anyone feels during a crisis, when risk is keenly feared and safety desperately sought. But normally, risk and safety information is pretty boring.

To transmit boring information effectively, you need to overcome boredom. That’s the most difficult part of what I call “precaution advocacy”—alerting apathetic people to serious risks and getting them to protect themselves appropriately. So how do you overcome boredom? How do you get people to learn risk information—or any information? I know of only four answers.

Learning without Involvement

The average television viewer pays little attention to the commercials, but nevertheless knows dozens of advertising jingles by heart. That’s learning without involvement. Even if you’re not really listening, if you hear something enough, it starts to stick.

Making messages sticky isn’t the same as making them interesting. A catchy jingle sticks in your mind without necessarily arousing your interest. Some messages actually work better if you’re not paying too much attention; they sneak past your cognitive defenses.

Unfortunately, learning without involvement requires a lot of repetition, preferably verbatim repetition, and repetition requires a hefty budget. Even if you run a weekly employee safety meeting, you’re not likely to achieve the level of repetition that advertisers consider essential. Learning without involvement works, but you probably can’t afford it.

Interest and Entertainment

You’re channel surfing when you come across a documentary on the sex life of the rhinoceros. This is not information you actually have much use for, but it’s interesting and entertaining. So you stop and watch for a while.

If you can arouse people’s interest or entertain them, you’ll get their attention, and then you won’t need so much repetition. You can overcome boredom by saying something that isn’t boring.

It’s best if you can make the risk information you’re actually trying to impart interesting or entertaining in its own right. If that seems impossible, the fallback strategy is to add interesting/entertaining irrelevancies. Maybe a 30-second riddle or joke can keep everyone awake for an extra three minutes—leaving two and a half minutes more to talk about risk and safety.

Although I have lumped “interesting” and “entertaining” together, interesting is better. You want your audience in a frame of mind to learn, not to relax and have fun. Conversely, advertisers often

prefer entertaining, which is more conducive to learning without involvement. But entertaining is usually easier than interesting to achieve.

It’s hard to make risk and safety information interesting or entertaining, but trying is always worth the effort.

Need to Know

A reason to learn leads to information-seeking, and it’s easy to deliver information to people who are actively seeking it. That’s why I advise my precaution advocacy clients to focus less on delivering the information, and more on motivating their audience to want to receive it. Perhaps the most powerful motivation to acquire information is a pending decision that requires information.

Instead of explaining a safety procedure yet again, or even explaining it better, it will usually pay more dividends to work on increasing people’s sense that they’ve got a safety problem, decreasing their sense that they cannot solve it and increasing their commitment to finding or creating a solution. Make sure they must make a decision, feel capable of implementing it and care about making it wisely. Then organize your information so it helps them make their decision.

It follows that empowering people helps you educate them. The more control we have over a situation, the more we want to learn how best to manage it. If the decision is in your hands, not mine, why should I bother to learn about the problem?

Crisis situations naturally motivate huge amounts of information-seeking, because what PR expert James E. Grunig calls “problem recognition” and “level of involvement” are both going through the roof. Sometimes, in fact, the level of involvement can be too high; while stress makes people more desperate to learn, it can also make it harder for them to learn.

Even a comparatively low-involvement “need to know” can help motivate people to learn. Imagine telling your audience that there will be a short multiple-choice quiz at the end of your presentation. Assume you have stressed that nobody’s going to get a grade, that it’ll be an anonymous show of hands, that you’re testing what you managed to teach, not what they managed to learn. Despite all that, people will listen harder when they know they’re going to be asked what they learned.

People will also listen harder when they know they’re going to be asked what they think about what they learned. I remember chairing a meeting in which I asked the audience to sit according to their opinions—proponents on one side, opponents on the other and undecideds in the middle. Periodically, I asked everyone to consider whether their opinions had changed any, and if so, to change seats as appropriate. There wasn’t a lot of seat-changing, but there seemed to be more attention than usual. People had to keep deciding whether they were still in the right seat.

Ammunition

Psychologist Leon Festinger’s theory of cognitive dissonance argues that a great deal of learning is motivated by the search for ammunition to reduce the discomfort (or “dissonance”) that people feel when they have done something or decided something they’re not confident was wise.

A classic cognitive dissonance study examined people’s information-seeking before and after buying a car. Researchers concluded that most people read more car-related information the week after their purchase decision than the week before, but what they read changes. Before deciding which car to buy, you’re in need-to-know territory, trying to assess the pros and cons of the models

you’re considering. After you make up your mind, your information-seeking becomes more biased: You’re looking for evidence that you bought the right car. Smart car dealers give purchasers lots of literature to help them reduce their cognitive dissonance.

Cognitive dissonance explains why it’s easier to get people to sign a petition (to be courteous) and then read your literature (to validate their decision to sign) than the other way around. It explains why a lot of persuasion theory is grounded in various “foot in the door” strategies. The key is to get an initial behavioral commitment—no matter how casually or irrationally motivated—and then rely on cognitive dissonance (“what did I do that for?”) to motivate information-seeking that will justify the initial behavior and thus make it more sustainable and generalizable.

It’s crucial to get the new behavior before you start laying on information, so people experience your information as supportive of their new behavior, rather than as hostile to their old behavior. When activists skip directly to the information step, they’re often ignored. Or worse: Instead of reducing cognitive dissonance arising from the new behavior, the information may arouse cognitive dissonance about the old behavior, leading people to look for evidence that their old behavior was right and the new, contrary information is wrong.

Industrial hygienists could make a lot better use of cognitive dissonance than they do today. If you can get people to where they’re trying to convince themselves that you’re right, they’ll see your safety message as useful ammunition and they’ll listen a lot better.

People also have use for ammunition in their arguments with others. If I already believe X firmly, I may not need to pay so much attention to the arguments on behalf of X. You’re preaching to the converted. But if my coworker or my spouse disagrees, then I have a good reason to collect pro-X ammunition. Better still, ask me to explain X to a bunch of newcomers tomorrow, and I’ll pay extremely close attention to your explanation today.

Bottom Line

I sometimes claim that these four factors—learning without involvement, interest/entertainment, need to know and ammunition—are the only reasons why anybody ever learns anything. I’m not sure that’s true; I’d be more than happy to expand the list.

This is the bottom line: Whenever you want to teach people something, first ask yourself what reasons they have to want to learn it. If those reasons aren’t very impressive, work on giving them better reasons. You also need to get the information out there; you need to make it understandable. But the most crucial task in precaution advocacy is also the most neglected: motivating the audience to want to learn. 📌

Peter M. Sandman is a risk communication consultant and speaker. Much of his work on risk communication can be found on his website, www.psandman.com. Comments on this and future columns can be sent to peter@psandman.com.

RENTALS

- *Industrial Hygiene Instruments
- *Noise Monitoring Instruments
- *Indoor Air Quality
- *Portable Gas Analyzers
- *Geotechnical Instruments
- *Benchtop Analytical Instruments
- *Mobile Laboratories

REPAIRS

- *Repair Services
- *Calibration Services

SALES

*New, Used & Remanufactured



ON-LINE Catalog:
www.on-siteinstruments.com

1-800-251-3322

Nationwide Service

Circle Fax-back Card No. 17



RISK ASSESSMENT

Closing the Exposure Gap

Occupational Exposure Bands, ERAM, and Prevention through Design

BY DONNA S. HEIDEL AND SUSAN D. RIPPLE

In January 2011, over 107,000 chemicals were manufactured within or imported into the European Union in quantities exceeding 1,000 tons. Chemical manufacturers and importers were required by EU's Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) legislation to register these chemicals with the EU. By 2018, REACH registration requirements will be extended to all chemicals manufactured or imported in quantities greater than 1 ton. A similar number of chemicals are likely handled in the United States and can cause adverse health effects if exposures are not controlled below the associated occupational exposure limit (OEL).

Over the past 70 years, industrial hygienists have developed authoritative OELs for about 2,000 chemicals—two percent of current REACH registrations. A variety of factors limit OEL development, including insufficient data, human and financial resources, and the need for an intensive process to ensure accurate interpretation of data. Traditional industrial hygiene practice requires an OEL and an analytical method to determine exposure risk to a chemical agent. However, chemicals are introduced into commerce at a rate that exceeds our ability to develop authoritative OELs. Therefore, it's necessary to expand the scope of industrial hygiene practice to all chemical agents with the potential for adverse effects from occupational exposures. Ways that we can close this "exposure gap" include eliminating hazards, identifying appropriate substitutes and designing-in appropriate controls.

ERAM and OEBs

AIHA's vision for 2020 is to eliminate workplace illnesses. With the annual cost

of occupational illness now estimated at \$58 billion,¹ achieving that goal will demonstrate the value of our profession to the workers we protect and the businesses we serve. To achieve this vision, AIHA® participates in the development of standards, policies, legislation and regulations that improve human health exposure risk assessment and management (ERAM). ERAM combines industrial hygiene exposure risk assessment with the management of exposure risk using the hierarchy of controls.

ERAM is foundational to the safe development of emerging technologies and to hazardous chemicals already in our workplaces. ERAM is also an important component of the NIOSH-led initiative Prevention through Design—eliminating hazards and controlling exposure risks to an acceptable level at the source or early in the life cycle of equipment, products, processes or facilities (see www.cdc.gov/niosh/topics/PtD).

One way to address the limitations of OEL development is through occupational exposure banding—the process in which hazards are evaluated in terms of potential adverse effects, including dose, from occupational exposure routes, and communicated in terms of target occupational exposure ranges. Occupational exposure banding can be the first step in a comprehensive ERAM approach to chemical hazards. OEBs may be the most appropriate way to group families of materials where data or resources are too limited to allow for a comprehensive and conclusive assessment of risk.

How can industrial hygienists include OEBs into ERAM for the majority of chemicals in commerce without authoritative OELs? Can OEBs (also known as

health hazard bands) be used to conduct qualitative or semi-quantitative exposure risk assessments and serve as the basis for selecting appropriate exposure controls? Also, can these OEBs be used to characterize hazards and assess potential worker exposure risks during the design of processes, products and facilities so that design engineers can specify appropriate controls?

Occupational health categorization makes data analysis more rigorous, consistent and transparent. It highlights areas where data are missing, often prompting industrial hygienists to generate additional data or share existing data. It also provides guidance for materials for which there are not yet sufficient data to develop an authoritative OEL. Finally, an OEB is a logical approach for initiating controls following exposure risk assessment.

NIOSH scientists, led by the Prevention through Design program, are collaborating with AIHA and expert stakeholders to develop a process for identifying and categorizing chemical hazards into OEBs using the "risk" (R) and "hazard" (H) phrases in the Globally Harmonized System (GHS) for classifying and labeling chemicals. This process will require hygienists to be engaged in hazard evaluation by consistently evaluating the toxicology data and applying weight of evidence to determine the appropriate OEB. Hygienists will then communicate the hazards and evaluate exposure risks, using ERAM, for a group of chemicals that might not have been evaluated previously.

This approach will standardize our evaluation of the hazard end points in preparation for the ERAM process. Following the exposure risk assessment, hygienists can confidently develop ex-

posure control strategies. The OEB process will expand the scope of industrial hygiene to all chemical hazards and facilitate informed decision making during the design (and redesign) of processes, products and facilities.

Uses of OEBs

Successful use of OEBs has been demonstrated in large manufacturing companies as well as small and medium-sized enterprises, distributors and formulators. OEBs are useful in product stewardship and Responsible Care® strategies and can be leveraged throughout the cradle-to-cradle life cycle.

Imagine the exposure risk assessment process in a large global chemical manufacturer such as The Dow Chemical Company, which provides a single standard of care in every facility, including smaller external manufacturing facilities, distributors and formulators. Dow manufactures more than 5,000 products at 188 sites in 35 countries, and uses or isolates about 70,000 chemicals to make those products. The vast majority of these chemicals do not have authoritative OELs, so Dow uses occupational exposure banding to assess risk and control worker exposures with greater confidence. OEBs help hygienists and engineers understand the health effects of chemicals so important decisions about controlling worker exposure can be made.

In Dow's production facilities, OEBs verify that existing engineering control strategies are adequately protective. Since the early 1950s, Dow hygienists have used toxicology data to assign exposure risk management control strategies based on OEBs. In recent years, this process has included use of EU risk phrases and GHS phrases to improve the consistency of the banding outcomes. In addition to providing information about the degree, duration and frequency of exposure, the OEBs help prioritize and assess exposure risks for each task and each chemical used within each job class. Hygienists at Dow use direct monitoring methods or surrogate exposure assessments to verify that an existing control strategy adequately maintains exposures below the targeted levels in the OEB.

OEBs also help determine appropriate chemical substitutions. In one case at Dow, a solid material that had a moderate amount of toxicology data was found to cause a severe rash in some employees. The nature of these rashes drove Dow to gather more information and cancel the use of this material in all Dow facilities.

Product Stewardship

Dow also uses OEBs to provide specific end user information to groups of workers through product stewardship efforts, particularly where an OEL may be unavailable or inadequate, or where exposure situations may result in illness. In 2005, Dow collaborated with NIOSH and Kaiser Permanente hospitals in California to provide updated hazard information to endoscopy nurses for the cold disinfectant glutaraldehyde, utilizing the Dow OEB process. Endoscopy nurses are focused on infection control and protection against bloodborne pathogens; peak exposures to a glutaraldehyde formulation resulted in needless respiratory sensitization of the workers.

Using this new data, Dow, NIOSH, OSHA and Kaiser Permanente reached out to product formulators and nurses to warn them about the impact of peak exposures. A strategy was developed to communicate the Prevention through Design approaches to control peak exposures through modifications to facility design, ventilation systems, work practices, PPE, hazard communication and spill cleanup. Development of the OEB and related control approaches and the substitution of alternatives are believed to have contributed to a steep reduction in illnesses related to peak exposures.

Looking Ahead

OEBs will provide many more opportunities for industrial hygienists to prevent occupational illness through the application of ERAM. OEBs will help manufacturers communicate hazards and data-based risk management strategies. OEBs and Prevention through Design give chemical manufacturers, employers, workers and end users another avenue

through which exposure risks are assessed and mitigated.

The ultimate goal is for the design engineer to include the output of the occupational health categorization process and exposure risk assessment into the design of facilities, processes, equipment and products. Designing-in appropriate controls for all potentially hazardous chemicals will protect workers, reduce costs and facilitate speed-to-market. 

Donna S. Heidel, MS, CIH, is a research industrial hygienist with NIOSH in Cincinnati, Ohio. She can be reached at (513) 533-8489 or dheidel@cdc.gov.

Susan D. Ripple, MS, CIH, is a global senior industrial hygiene manager with the Dow Chemical Company in Midland, Mich. She can be reached at (989) 636-5572 or sdripple@dow.com.

Reference

1. Leigh, J.P.: "Economic Burden of Occupational Injury and Illness in the United States." *Milbank Quarterly*, 89: 728-772 (2011).



Industrial Hygiene & Environmental Testing

One Stop Service

IH Analyses

Solvents	TO-15/TO-17
Metals	HDS
CrVI	LEED
Welding Fumes	PCBs in Paint
PAH	Allergens
Formaldehyde	Microbiology
Acid Scan	PCR
Isocyanates	IAQ

Environmental Analyses

Air, Water, Soil, Waste & TCLP

www.ablabs.com

10100 East Freeway, Suite 100
Houston, TX 77029
1-877-478-6060
1-713-453-6060

AIHA-LAP (Lab # 101470)
NELAC (T104704213-10-2)
NVLAP (101793-0)
Accredited
Established 1988

Risk Assessment's NEW ERA

Part 1: Challenges for Industrial Hygiene

BY G. SCOTT DOTSON, ALAN ROSSNER,
ANDREW MAIER, AND FRED W. BOELTER



Risk is an inherent aspect of our lives. Whether the topic is the nation's dietary habits, community air pollution or chemical exposures in the workplace, risk analysis is an integral part of the conversation.

Risk analysis is the combined activities of assessing, managing and communicating human health risks. Interest in understanding risk from chemical exposures and other stressors has led to the formalization of health risk assessment as an applied public health science. Numerous seminal reports from the National Academies of Science (NAS) have highlighted the framework for risk assessment and risk management, as well as key changes within the practice of risk analysis.

The profession of industrial hygiene has evolved to reflect the changes in health risk assessment methodology and practice. Traditional industrial hygiene practice—the anticipation, recognition, evaluation and control of occupational and environmental hazards and risks—parallels key aspects of health risk assessment. Thus, industrial hygienists have a strong history as leading practitioners of all aspects of risk analysis—health risk assessment, risk management and risk communication—within the occupational environment.

Risk analysis methods and tools are important resources for articulating scientific knowledge to those who make decisions regarding public and occupational health. Just as we need to stay attuned to developments in the latest air sampling techniques, keeping current on risk analysis is equally essential.

As the field of risk analysis expands, emerging techniques will be valuable for practicing industrial hygienists. Examples include:

- tools for addressing aggregate risk from single agents yet multiple environments (for example, work, home, car, air) and cumulative risks from multiple stressors
- a more thorough incorporation of cost-benefit analysis and life cycle impacts on occupational exposures for a better understanding of the economic impacts of risk management decisions
- improved techniques for studying how perceptions affect the acceptability of a particular risk

Driven by advances in science and technology, these new risk analysis methods are allowing health professionals, including industrial hygienists, to tackle ever more complex problems and make more informed decisions. For industrial hygienists, this new era offers several opportunities. Mastery of risk analysis tools is one of our core competencies; staying ahead of the curve will serve occupational and public health well and increase our value.

With this vision in mind, AIHA sponsored the 8th Risk Assessment Symposium as part of the Professional Conference on Industrial Hygiene (PCIH) in Baltimore this past November. The Symposium highlighted innovations that are fundamentally changing the practices of risk assessment, risk management and risk communication.¹ Speakers at the Symposium represented experts in the fields of industrial hygiene, toxicology, occupational health and risk assessment from academia, industry and the public sector.

Over the next few months, a series of articles in *The Synergist* will describe the key concepts presented during the Symposium. This article, the first in the series, identifies the main challenges facing industrial hygienists as we enter the new era of risk assessment.

Reducing Uncertainty

Uncertainty is inherent within a risk assessment.² If a dangerous condition exists with little or no uncertainty, there is no reason to assess risk; one moves directly to controlling the hazards. Thus, risk assessments must consider uncertainty during every phase of the process.

Uncertainties exist in the identification and measurement of hazards, the estimation of exposures, the identification and measurement of health effects associated with exposures, and the method used to characterize population and operational risks. Creating a risk assessment is an iterative process designed to be refined until there is consensus on the most important and most uncertain factors affecting the results. How confident do decision makers need to be regarding these important but uncertain factors? The answer to this question should determine the duration and complexity of the risk assessment. Perceptions of risk and the availability of data influence estimates of health risk.



A major criticism of the risk assessment process concerns the impact of uncertainty on the accuracy and usability of the findings. Uncertainty can be thought of as absence of knowledge on a specific issue, such as the toxicity or physiochemical properties of a sub-

stance, or the distribution of exposures among a group of factory workers. One way to reduce the impact of uncertainty is to include data within each step of the risk assessment. The need for robust sources of scientific data is a challenge that must be overcome to ensure accurate, usable results.

Fortunately, promising scientific advancements may help reduce uncertainty. For example, new toxicity testing methods under development might offer quicker and less expensive alternatives to traditional bioassays. A groundbreaking 2007 NAS report outlined a framework for the continued development and use of alternative testing methods that aligns with the traditional risk assessment paradigm³ and generates data needed to reduce uncertainty within the hazard identification and dose-response steps of a risk assessment. This information will help characterize chemicals' properties and metabolism, define key exposure pathways, and identify potential human effects of exposure. These new sources of data will greatly enhance industrial hygienists' ability to conduct effective occupational and environmental assessments. The challenge lies in understanding and applying the new data to reduce the impact of uncertainty within the risk assessment process.

Shifting from Traditional Health End Points

What health end point should serve as the focal point for an occupational risk assessment? Should transient reversible or subclinical health effects be regulated to the same level as irreversible effects, such as cancer?

These questions are frequently debated among health professionals, stakeholders and regulators. A review of the documentation of available occupational exposure limits (OELs) quickly demonstrates that a large majority of the health-based recommendations focus on irreversible health end points, such as cancer, neurotoxicity or reproductive effects. Advances in science and medicine now allow us to identify subclinical effects, such as genetic and immune responses to certain chemical agents,

that have not been considered during the derivation of OELs. For example, consider the effects of enzymes that metabolize occupationally relevant toxicants. Many genes that code for these enzymes are polymorphic—that is, the genes vary from person to person, resulting in different responses. In theory, a subpopulation of workers might exhibit greater susceptibility to the toxic effects of a chemical and, therefore, require additional protection. In the case of dichloromethane, researchers have found that examining genetic data reduced the unit risk by a factor of more than 100 from previously published risk assessments. The degree to which genetic polymorphisms increase human variability in toxic response is widely discussed, but so far, such variability has been poorly characterized.

Genetic data may also prove useful in addressing uncertainties in cross-species and other extrapolations. It remains to be seen how useful the genetic data being accumulated now will be to 21st century risk assessment, but it's clear that integrating genetic information into risk assessment will be an exciting new challenge.

Another emerging practice, cumulative risk assessment, assesses the combined risks associated with multiple stressors on human health. This goes beyond determining the impact of exposures to a single agent via multiple pathways, such as inhalation, dermal and oral; it attempts to determine the role of numerous agents on the development of a disease.⁴ Cumulative risk assessment shifts the attention for a single stressor, such as a chemical, to multiple stressors. Although industrial hygienists are familiar with the need to account for multiple exposure pathways, assessing multiple stressors is a new concept that poses numerous challenges. For example, how do we control a specific hazard within the workplace when a cumulative risk assessment reveals that non occupational factors (for example, contaminated waters, prescription medication and dietary habits) are increasing the risks of health consequences for workers? Clearly, industrial hygienists need to consider

nontraditional exposure scenarios with a focus on the pathways, sources and agents.

Emerging Hazards

Industrial hygienists are all too familiar with the challenges that arise when emerging technologies are introduced into the workplace. These novel hazards might stem from new molecules or processes, old molecules used in new ways or non chemical stressors.

The best example of new molecules that are impacting our world may be engineered nanomaterials, which in recent years have been integrated into an infinite number of commercially available products. The new molecules under development to comply with the need for sustainability are another example. The data available on the toxicity of these chemicals are often limited, and the health risks to humans are unknown. New uses of molecules traditionally identified as safe may result in hazardous conditions not previously characterized (flavoring compounds, for example). The last type of emerging hazards focuses on nonchemical stressors, such as shift work, which the International Agency for Research on Cancer recently identified as probably carcinogenic to humans based on disruption of the body's biological rhythms.⁵

What health risks do these emerging hazards pose to workers, the environment or consumers? How do industrial hygienists develop risk management policies to protect workers when limited

data are available on these hazards? These questions aren't easy to answer.

Meeting the Challenge

Industrial hygienists are uniquely qualified to participate in the evolution of the risk assessment process due to the multidisciplinary nature of the profession and our long history as risk assessment professionals. And because of our training and education in the physical and biological sciences, public health, engineering and management, we have a perspective not shared by other, more specialized professions. We are therefore well placed to take the lead in developing methods of risk analysis (risk assessment, risk management and risk communication). A proactive stance will ensure that new technologies and approaches in the risk sciences can address the challenges posed by the occupational environment. 

G. Scott Dotson, PhD, CIH, is an industrial hygienist with CDC/NIOSH in Cincinnati, Ohio. He can be reached at fya8@cdc.gov or (513) 533-8540.

Alan Rossner, PhD, CIH, CSP, is a professor in environmental health science at Clarkson University in Potsdam, N.Y. He can be reached at rossner@clarkson.edu or (315) 268-6470.

Andrew Maier, PhD, CIH, DABT, is director of Toxicology Excellence for Risk Assessment (TERA) in Cincinnati, Ohio. He can be reached at maier@tera.org or (513) 542-7475 x23.

Fred W. Boelter, CIH, PE, BCEE, is principal of Environ International in Chicago, Ill. He can be reached at fboelter@environcorp.com or (312) 288-3820.

References

- 1. AIHA Risk Assessment Symposium:** "Converging Risk Analysis, Management, and Perception." Professional Conference on Industrial Hygiene (PCIH), Baltimore, Maryland (Nov. 3–4, 2011).
- 2. National Research Council (NRC):** *Science and Decisions: Advancing Risk Assessment.* Washington, DC: The National Academies Press (2009).
- 3. NRC:** *Risk Assessment in the Federal Government: Managing the Process.* Washington, DC: The National Academies Press (1983).
- 4. NRC:** *Toxicity Testing in the 21st Century: A Vision and a Strategy.* Washington, DC: The National Academies Press (2007).
- 5. International Agency for Cancer Research:** *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 98: Painting, Firefighting, and Shiftwork.* WHO Press (2007).

3M™ Sound Examiner SE-400 Series Sound Level Meters



Integrating Measurements Robust Capability

The Sound Examiner SE-400 series of integrating, data logging sound level meters are engineered to accurately measure noise levels in highly variable environments. They compute the average sound pressure level (L_{EQ}/L_{AVG}) over the run time, helping you to more accurately assess occupational and environmental noise levels. All models ship ready-to-use, no setup necessary. Features include:

- Class/Type 1 and Class/Type 2 models available
- Variable, user-selectable measurement parameters
- Rugged design and long battery life
- Ability to export, report and share SE-400 data with the new 3M™ Detection Management Software DMS

© 2012 3M. All Rights Reserved. 3M is a trademark of 3M Company.

SPECIAL OFFER: Receive 3M™ Detection Management Software DMS Free of Charge



Purchase a Sound Examiner SE-400 or other 3M Quest data logging instrument before June 30, 2012 and receive DMS free of charge. This offer represents a **savings of \$495** – the list price for DMS if purchased separately. Visit 3M.com/dms for details.

For more information, please contact your local 3M Representative at 262-567-9157 or visit our website at 3M.com/soundexaminer.



Everything Within Reach at AIHce

Indy's "Most Walkable Downtown" to Host Premier OEHS Conference and Expo

BY KAY BECHTOLD

This summer, occupational and environmental health and safety and industrial hygiene professionals will journey to Indianapolis, Ind., for the premier conference and expo of the year, AIHce. For the first time ever, from June 16 to 21, Indianapolis will play host to thousands of AIHce attendees. The AIHce 2012 experience features more than 120 technical sessions, 61 professional development courses (PDCs), the opportunity to earn up to 8.51 certification maintenance (CM) points and over 300 exhibitors in the Expo.

Indy hosted Super Bowl XLVI in February, and its downtown area underwent massive renovation in preparation for the big game. The blocks surrounding the Indiana Convention Center are packed with more than 200 restaurants and clubs, a four-story shopping mall and numerous popular attractions. AIHce attendees have a wide variety of options for both fun and relaxation, all within easy walking distance of the hotels. Many affordable hotels offered through AIHce are connected to the convention center by climate-controlled sky bridges. Indy was named "the most walkable downtown in America" by *Sports Illustrated*; you can feel confident that you won't spend your evenings stuck in traffic in this city.

Some of the most popular city attractions include the Indianapolis Zoo, one of Trip Advisor's "Top Ten in America"; the Indianapolis Children's Museum, "Best in the Nation" according to *Child* magazine; and the Indiana Motor Speedway, home of the Indianapolis 500. At venues such as Clowes Memorial Hall, Consecro Fieldhouse and Murat Theatre, one can find everything from musicals to concerts to theater productions. Sports fans can check out the NCAA Hall of Champions or Victory Field, home of the Indianapolis Indians, a high-level minor league baseball team. Indy is also home to White River State Park—America's only cultural urban state park—which can be explored by bike, boat, Segway or on foot. There, visitors will find plenty of green space along with the zoo, the IMAX Theater, an excellent selection of museums and more.

For more information on AIHce 2012, the AIHA Indiana Local Section has put together a comprehensive "Local Access" website at <https://sites.google.com/site/aihce2012indianapolis>.

Conference Features

AIHce is constantly working on ways to make the conference experience better and more valuable for participants. This year, the conference has raised the bar yet again. AIHce 2012 offers up to 8.51 certification maintenance (CM) points and is backing each PDC with

its new “Get Three” Guarantee. (More information on the “Get Three” Guarantee can be found at www.aihce2012.org.) Also new to the conference is a free lunch in the Expo on Tuesday, June 19, covered by AIHce. Once again this year, registrants have the option to receive the entire conference with online access to AIHce On Demand. Included in the “Best Value” registration option, AIHce On Demand features all digitally captured conference content, including speaker presentations synced to PowerPoint slides. This content will be available for download after AIHce concludes.

Indy will be the site of the first AIHce Ignite Sessions. Ignite presentations are a growing phenomenon. In Ignite talks, presenters have five minutes to share their professional and personal passions using 20 PowerPoint slides that auto-advance every 15 seconds. The Ignite motto is “Enlighten us, but make it quick.” The Ignite Sessions will be held on Tuesday, June 19, with a “nightclub” feel—the room will have round tables and presenters will have only a hand microphone.

The AIHce Mobile App is making its debut in 2012 and will allow you to create and manage your schedule, view detailed session and exhibitor listings and stay informed on up-to-the-minute AIHce news, directly from your smartphone. Keep an eye on the AIHce website for more information.

Keynote Speakers

The Opening General Session on Monday, June 18, features Juan Enriquez, who will present “The Future: Life Sciences and the Knowledge Economy.” Enriquez is co-founder of Synthetic Genomics Inc. and managing director of Excel Venture Management. As Enriquez will demonstrate, the genetic revolution and other technologies will have unprecedented political, ethical, economic and financial impacts on almost every workplace in the coming years. During this session, attendees will learn how these discoveries and applications affect OEHS professionals.

NIOSH Director Dr. John Howard, a national leader in occupational health and safety, will share his vision for the future of the OEHS profession during Tuesday’s General Session. Howard’s address, “Redefining Our Future,” will discuss ways that OEHS professionals can adapt to emerging trends. Following this thought-provoking talk, attendees will have the opportunity to interact with Dr. Howard during a special “Ask the Expert” Session geared toward stimulating conversation.

John C. Sheptor, President and CEO of Imperial Sugar Company, will open Wednesday’s General Session with an address titled “A CEO’s Perspective: Redefining Our Future.” Back in February 2008, Sheptor was present for the explosion that killed 14 workers and wounded several others at Imperial Sugar’s Port Wentworth, Ga., refinery. Since then, the company has made numerous safety and health changes and rebuilt the refinery with new technology. Sheptor will share lessons learned about change as he led Imperial Sugar through this transformation.

For more information on the AIHce keynote speakers, visit <http://bit.ly/aihce2012generalsessions>.

PDCs and Technical Sessions

This year, AIHce is offering three certification preparation courses—the most offered to date. New in Indianapolis is the two-day qualified environmental professional (QEP) prep course, which will be held Friday and Saturday, June 15–16. Due to high demand, the certified safety professional (CSP) and certified hazardous materials management (CHMM) three-day PDC exam prep courses are back. These courses are offered Friday through Sunday, June 15–17, and are geared toward ensuring that participants are well equipped for upcoming certification exams. The new PDC “Case Studies in Ethical Decision Making” is offered both Saturday and Sunday and fulfills ABIH Ethics requirements. There are also several PDCs that fulfill ABIH’s Safety Rubric requirement.

With over 120 technical sessions covering more than 50 topic areas, AIHce offers a diverse representation of programs. The week is packed with timely, high-quality learning opportunities in different session formats: general sessions, lectures, lunch discussions, roundtables and podium and poster sessions. Every topic has a place at AIHce, from asbestos (for example, see session PO 107, “Aerosols”) to nanotechnology (RT 206, “Ask NIOSH Experts”) to ergonomics (RT 208, “Leaders and Legends in Ergonomic Modeling”) to toxicology. The AIHce 2012 Advance Program is available for download at <http://aihce2012.org/education/advance-program> and contains specifics on all of the sessions being offered in Indy this June.

Networking

Spend time with old friends and meet new colleagues at the Expo Opening Cocktail Reception on Monday, June 18, and the MSA/AIHA reception on Tuesday. The conference is also hosting many open volunteer group meetings, ancillary sponsored functions, technical and social tours and the annual AIHF Fun Run/Walk. Students and early career professionals will find many events and activities specially geared toward those new to the profession. The *Career Advantage* Development Fair will run from Monday to Wednesday, June 18–20, and is a great resource for job seekers, employers and recruiters alike.

Find Out More

Take advantage of savings and avoid on-site rates if you register by May 30, the deadline for Advance Registration. Go to www.aihce2012.org to register and find other AIHce information.

**Advance Registration
Deadline: May 30**

Kay Bechtold is editorial assistant for The Synergist. She can be reached at (703) 846-0737 or kbechtold@aiha.org.



Total Noise Exposure

Thoughts on Controlling Noise on (and off) the Job

BY JOHN C. RATLIFF

There are two significant concepts in noise control: engineering controls and total noise exposure. It is also important to remember that there are both occupational and environmental exposures to noise; many IH practitioners tend to ignore the off-the-job exposures. This is a mistake: it's important for us to help people protect their hearing, both on and off the job. Still, we can do a lot to control noise at work, and many simple, effective interventions are often overlooked.

Engineering controls have been the topic of intense discussion for years. Many people think that engineering controls are always terribly expensive, which is not necessarily the case, as shown by the scenario below.

Easy Engineering Controls

I work for a company that provides high-purity chemicals to the semiconductor industry. We use drum rollers to condition 55-gallon chemical drums by rolling them with fluid so we can remove contaminants. This procedure helps maintain chemical purity. One day, I identified a drum roller that was too noisy. After ensuring that production workers were aware of the hazard, and wearing proper hearing protection, I turned the drum roller over to maintenance.

Months later, as I initiated a ventilation study of the area, I got a good look at the drum roller (see Figure 1). Only one of the screws holding its sheet metal sides was in place—the rest were missing—and it had a loose clamp as well. These were the reasons why it was so noisy.

I had not looked closely at the drum roller for several reasons. For one, it was in use at the time of the high noise readings, and in a clean room. I was told that it was “worn out” and needed replacement. And, like the rest of us, I had a lot of other things going on. Now, the fix looked easy. Simply replacing the screws in the metal side, muffling the air exhaust and using some lubrication produced dramatic results. The resulting noise reduction

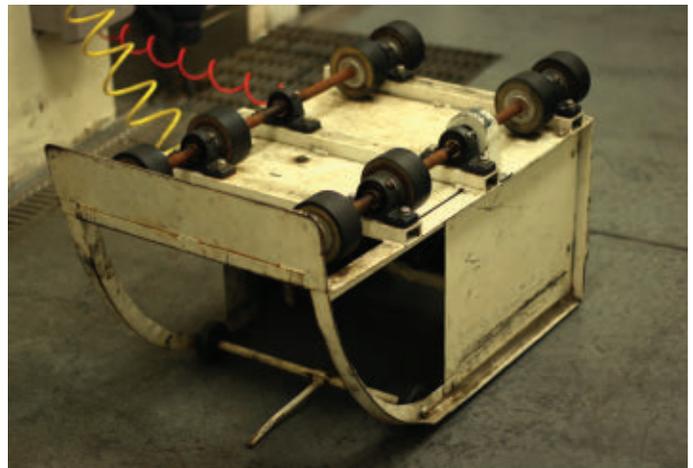
was down from 113.3 A-weighted decibels (dBA) to 88.7 dBA on high speed and 80.8 dBA on low speed. Our work on the air muffler and side screws as well as our understanding that the drum roller had a speed governor (air pressure) helped greatly. Simple maintenance measures like these represent effective, inexpensive engineering controls. I should have considered these sooner.

This is just one example of the many noise-related situations I have encountered over the years. I have come to understand that the ear has not been given the credit it deserves, nor has it been protected as it should be. We are dependent on sound, and yet unwelcome sound in the form of noise is ubiquitous. In many industries, noise exposure is difficult to gauge, and protecting workers is even more challenging.

Noise Control in Construction

A few years ago, I was the EHS person for a construction project that had a multi-employer work site with many contractors. I wanted to understand the potential noise exposures for contractors in the area to determine whether workers needed hearing protection. Because I was working off site, I asked another safety

Figure 1. This drum roller was excessively noisy until it was lubricated, the screws put into place, and a muffler placed on the air line.



professional to take some noise readings. When he gave me the noise levels, he commented that I was “trying to find an overexposure.” But that was not my intent—I wanted to determine the exposures and then institute appropriate controls.

The American National Standard for Hearing Loss Prevention for Construction and Demolition Workers (ANSI/ASSE A10.46-2007) recognizes that hearing protection is very difficult in a construction area. The standard states that when workers are exposed to sound levels at or above 85 dBA, controls should be put in place to reduce sound levels to below 85 dBA. If those controls fail to reduce exposure levels below 85 dBA or are not feasible, employees should be provided hearing protection devices. Workers exposed to noise exceeding 105 dBA should wear double hearing protection, which adds about 5 dB of attenuation to the protector with the higher noise reduction rating (NRR). However, if a fit-test of user attenuation measures proper protection with a single protector, double protection may be disregarded.¹

This requirement is independent of a time-weighted average exposure because noise exposures in a construction area change constantly and are impossible to define. To protect workers from noise in these areas, hearing protection is always necessary.

New Noise Research

Recent research shows that noise is more hazardous than previously thought. In studies of laboratory guinea pigs,² researchers found that exposure to high-decibel impact noise left lasting effects on the cochlear nerves independent of the measured threshold shift in hearing. This could explain the basis for tinnitus and other disorders of the ear, such as the inability to understand speech in a noisy environment. This loss of understanding does not affect the ability to detect sounds and is therefore not detectable using standard audiograms.

According to Dr. Sharon Kujawa, in a study published in *The Journal of Neuroscience*, exposure to noise is “more dangerous” than current exposure guidelines seem to take into account:

[N]ormal threshold sensitivity can mask ongoing and dramatic neural degeneration in noise-exposed ears.... Federal exposure

guidelines ... aim to protect against permanent threshold shifts, an approach that assumes that reversible threshold shifts are associated with benign levels of exposure.... The present results contradict these fundamental assumptions.

Figure 2. Fit-testing for hearing protection is now an easy process. It compares ambient noise outside the ear with the noise inside the ear.



Thus, new scientific insights demand that we reassess the use of audiometric exams as a basis for all determinations on the effects of occupational noise.

What We Still Don't Know

We are still learning just how much we don't know about noise exposure in the workplace. For instance, we don't know whether our hearing protection devices effectively protect workers. Last summer, a nationally known manufacturer of ear plugs conducted a fit-testing demonstration at my workplace (see Figure 2). One employee tried a plug with an NRR of 25 dBA. Testing showed that he was getting a reduction of only 3 to 7 dBA, as if he were not wearing hearing protection at all. We found out that he had very large ear canals and could not use standard-sized ear plugs. He uses earmuffs now instead.

Hearing protection is not a cure-all. We know that substitution and elimination are the best control methods. NIOSH is de-

Noise Events at AIHce 2012

At AIHce 2012, attendees will find several PDCs and technical sessions focusing on noise hazards. In addition, two special events are geared toward building an advanced understanding of noise exposures both on and off the job.

85/3 Coalition

The 85/3 Coalition is a brand-new group dedicated to recognizing organizations and employers that have adopted 85 dBA for an 8-hour noise exposure limit measured with a 3 dB exchange rate for their hearing loss prevention programs. The 85/3 Coalition encourages others to adopt this hearing protection strategy. A session on the 85/3 concept will be held at AIHce on Monday, June 18. For more information on the 85/3 Coalition, e-mail 853@safesound.us.

Dangerous Decibels Workshop

Dangerous Decibels is a public health campaign focused on hearing loss prevention intervention, especially for children. According to the 3rd National Health and Nutrition Examination Survey, “5.2 million 6- to 19-year-olds have hearing loss directly related to noise exposure.”³ In response to this information, Oregon Health & Science University, Portland State University and University of Northern Colorado are leading the Dangerous Decibels Educator Training Workshop June 19–20 at AIHce. Interested individuals can learn how to deliver a 50-minute classroom program demonstrated to change knowledge, attitudes and behaviors in elementary school students regarding sound exposure and the use of hearing protection strategies.

veloping a “Buy Quiet” web tool for use when purchasing new equipment for the workplace (for more information, visit <http://bit.ly/buyquiet>). To get the quietest equipment available, put a noise specification into the equipment purchase requisition. This is a much better control than simply giving people hearing protection and setting up a noise and hearing conservation program (HCP), and it may be less expensive when considering the costs of the HCP as well as potential hearing loss claims.

Even our noise measurement process has evolved since the inception of the OSHA noise regulations, which have not changed since the 1980s. We now know that the noise dose is dramatically affected by our measurement protocol and whether we use a 3 or 5 dB doubling rate. (The doubling rate is the rate of increase of decibels that halves the allowed time of noise exposure.) OSHA uses a 5 dB doubling rate, but the rest of the world (including ACGIH®) uses a 3 dB doubling rate. In addition, the thresh-

old at which a noise dosimeter begins measuring noise is important for longer-term, lower exposures, as research has shown that the damage from noise can begin at 70 dBA.

But most dosimeters, by design, do not register an exposure until 80 to 85 dBA (the threshold setting). The OSHA PEL is 90 dBA for 8 hours (the criterion), and the OSHA hearing conservation standard requires action at 85 dBA for 8 hours. So decreasing the threshold protects people from lower noise levels, especially if they are working extended shifts, since noise above 70 dBA can be damaging. Table 1 shows different dosimeter setups that can yield valuable information. Using the lower measurement criterion conserves employees’ hearing.

Table 2 shows an actual noise exposure of a materials handler who was working at a wrapping station. The maximum exposure of 115.6 dBA could have been an impact noise, but the dose levels are of great interest. The OSHA hearing protection levels are not protec-

tive of a significant portion of the working population. The ACGIH criterion is the standard; the Modified NIOSH criterion is currently experimental but much more protective. Since the dose is above the ACGIH TLV®, the employee should be placed on a noise and hearing conservation program. The Modified NIOSH criterion is 80 dBA for 8 hours and starts integrating at 70 dBA, which accounts for the much larger dose.

Protection in a Noisy World

If we can control noise exposures in the workplace and ensure that employees know the causes of hearing loss both on and off the job, we can contribute to better quality of life with age. It is imperative to help employees recognize this hidden hazard.

Industrial hygienists can do much to affect behavior. Our challenge is not only to understand the hazards associated with noise, but to educate our workforce about the dangers of noise exposure and encourage them to be conscious of noise in their environment and adopt safer behaviors. 

John C. Ratliff, CSP, CIH, MSPH, works in Industrial Hygiene and Environmental Health & Safety for Kanto Corporation in Portland, Ore. He can be reached at jratliff@kantocorp.com or (503) 978-1404.

Table 1. Criteria for Setting Up a Noise Dosimeter

OSHA PEL	OSHA Hearing Loss	ACGIH	Modified NIOSH*
Criterion: 90 dB Exchange Rate: 5 dB Threshold: 90 dB Upper Limit: 115 dB	Criterion: 80 dB Exchange Rate: 5 dB Threshold: 85 dB Upper Limit: 115 dB	Criterion: 85 dB Exchange Rate: 3 dB Threshold: 80 dB Upper Limit: 115 dB	Criterion: 80 dB Exchange Rate: 3 dB Threshold: 70 dB Upper Limit: 130 dB
Weighting: SPL:A Pk:Z Time Constant: Slow Alert Level 1: 90 dB Alert Level 2: 0 dB	Weighting: SPL:A Pk:Z Time Constant: Slow Alert Level 1: 90 dB Alert Level 2: 0 dB	Weighting: SPL:A Pk:Z Time Constant: Slow Alert Level 1: 85 dB Alert Level 2: 0 dB	Weighting: SPL:A Pk:Z Time Constant: Slow Alert Level 1: 80 dB Alert Level 2: 95 dB

*The author’s modified settings for incorporating NIOSH’s 1998 recommendations.

Table 2. Noise Exposure of a Materials Handler

Parameter	OSHA Hearing Loss	ACGIH	Modified NIOSH
Peak (dBA)	147	147	147
Min (dBA)	69.9	69.9	69.9
Max (dBA)	115.6	115.6	115.6
Lave dBA	81.2	86.4	86.6
TWA (8-hr) dBA	81.1	86.3	86.6
Dose (%)	29.05	135.3	449.3
P-Dose (%)	29.52	137.5	456.7

References

1. American National Standards Institute/ American Society of Safety Engineers: ANSI/ASSE A10.46-2007 Hearing Loss Prevention for Construction and Demolition Workers, American Society of Safety Engineers, March 5, 2007.
2. Kujawa, Sharon G. and Liberman, M. Charles: Adding Insult to Injury, Cochlear Nerve Degeneration after “Temporary” Noise-Induced Hearing Loss. *The Journal of Neuroscience*, 29(45): 14077-14085 (2009). www.jneurosci.org/content/29/45/14077.full.
3. Niskar, et. al.: Estimated Prevalence of Noise-Induced Hearing Threshold Shifts Among Children 6 to 19 Years of Age: The Third National Health and Nutrition Examination Survey, 1988–1994, United States. *Pediatrics*, Vol. 108 No. 1, pp. 40–43 (2001).

Opportunities

MEETINGS ■ CONFERENCES ■ COURSES
DISTANCE LEARNING ■ CALLS FOR PAPERS

Send information about OEHS events to synergist@aiha.org. For a complete list of events, visit www.aiha.org/education/Pages/CalendarofEvents.aspx.

April 20–21
Arlington, Texas

Southwest Police and Fire Expo—Texas Section. Contact: http://swpfe.com/Contact_Us.html;
<http://swpfe.com>.

April 22–25
Nashville, Tennessee

American Association of Occupational Health Nurses (AAOHN) 2012 National Conference. Contact: www.aaohn.org.

April 23

Combustible Dust: The Emerging Issue for 2012. CMs: 0.25; COCs: 0.15. Contact: www.zoubekconsulting.com.

April 23–26

Boston, Massachusetts
Safety in Design and Construction: A Lifecycle Approach. Contact: <https://ccpe.sph.harvard.edu/Design-for-Safety>.

April 24
Birmingham, Alabama

Best Practices in Personal Protective Equipment. Contact: (205) 934-7178; dsc@uab.edu; www.uab.edu/dsc.

April 25
Birmingham, Alabama

Respirator Fit-Testing Workshop. Contact: (205) 934-7178; dsc@uab.edu; www.uab.edu/dsc.

April 27
Natick, Massachusetts

Lab Waste Management. Contact: www.labsafetyinstitute.org/index.html.

April 29–30
Algiers

Ergonomics in Developing Countries. Contact: www.univ-alger2.dz/prevention/en/seminaire10.html.

April 29–May 2
Los Angeles, California

American Occupational Health Conference (AOHC). Contact: Mary Lunn; (847) 818-1800, ext. 393; mlunn@acoem.org; www.acoem.org/aohc.aspx.

April 30–May 4
Pittsburgh, Pennsylvania

Measurement of Hazardous Substances (including Risk Assessment). Contact: Loren Anderson; (724) 935-6400; LAAAnderson@golder.com.

May 1
Cincinnati, Ohio

Laser Safety Officer Training Course. Contact: www.rli.com.

May 3–6
Osaka, Japan

Second Annual Asian Conference on Sustainability, Energy and the Environment. Contact: <http://acsee.iafor.org>.

May 5–8
Las Vegas, Nevada

International Association of Fire Chiefs: Fire-Rescue Med (FRM) 2012. Contact: <http://s36.a2zinc.net/clients/IAFC/frm12/Public/enter.aspx>.

May 6–9
Edmonton, Alberta, Canada

The Canadian Institute of Mining, Metallurgy and Petroleum's 2012 Conference & Exhibition. Contact: www.cim.org/edmonton2012.

May 7–11
Boston, Massachusetts

Guidelines for Laboratory Design: Health and Safety Considerations. Contact: <https://ccpe.sph.harvard.edu/Laboratory-Design>.

May 8–11
Louisville, Kentucky

2012 Governor's Safety and Health Conference. Contact: www.kshn.net/Conference/default.htm.

May 22–27
Vilnius, Lithuania

12th World Congress on Environmental Health. Contact: Jurga Ramanauskaite; info@ifeh2012.org; www.ifeh2012.org/welcome.

May 26
Online

Fall Protection in General Industry: Nuts & Bolts for Recogni-

tion and Control. Contact: www.zoubekconsulting.com.

June 3–6
Denver, Colorado

The American Society of Safety Engineers (ASSE) Safety 2012 Conference. Contact: www.asse.org.

June 4–6
Boston, Massachusetts

Advanced Hands-On CAMEO Training. Contact: (617) 384-8692; contedu@hsph.harvard.edu; <https://ccpe.sph.harvard.edu/CAMEOS>.

June 4–6
San Antonio, Texas
Association for Professionals in Infection Control and Epidemiology (APIC) 2012 Conference. Contact: <http://ac2012.site.apic.org>.

June 4–8
Boston, Massachusetts
Radiation Safety Officer Training for Laboratory Professionals. Contact: (617) 384-8692; contedu@hsph.harvard.edu; <https://ccpe.sph.harvard.edu/RSO>.

June 4–8
London, Ontario, Canada
Golder Occupational Hygiene Training Course, OHTA Module W-505 Control of Hazardous Substances. Contact: (613) 592-9600; jcrichton@golder.com.

AIHce
2012 Edition

Consultants Listing

AIHA Consultants, it's that time of year again!

The deadline to be listed in the AIHce 2012 edition of the **Consultants Listing** is fast approaching.

Advertise your industrial hygiene consulting business to thousands of individuals and organizations attending AIHce in Indianapolis.



The deadline to be listed is April 20, 2012.

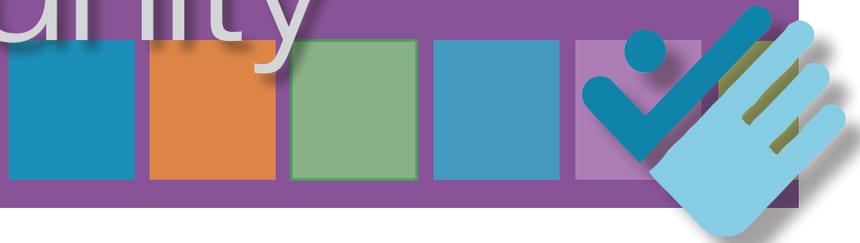
For more information, visit
www.ConsultantsListing.org
or call AIHA Customer Service at (703) 849-8888.

 **AIHA**[®]
Protecting Worker Health

Community

AIHA NEWS ■ FOUNDATION NEWS

ACADEMY NEWS ■ LOCAL SECTIONS NEWS



AIHce 2012 Conference Countdown June 16-21 • Indianapolis

AIHce Advance Registration Deadline: May 30

The *Advance Program* for AIHce 2012—to be held June 16–21 in Indianapolis, Ind.—was mailed in February and can be downloaded from www.aihce2012.org. The *Advance Program* features a full list of educational opportunities, highlights of events and activities offered during the conference and exposition, exhibit information and information on registration and hotel accommodations. Advance registration and hotel reservations for most AIHce hotels close on May 30. Register now to avoid on-site rates.



AIHce Mobile App

Keep AIHce at your fingertips with the AIHce App. Create and manage your schedule, view detailed session and exhibitor listings and stay informed about the latest AIHce happenings—all from the convenience of your smartphone. Visit the AIHce website for download instructions.

For more information about the conference, see the article on page 28. To register for AIHce 2012, visit www.aihce2012.org.



26th Annual AIHF Fun Run/Walk

Bring your running shoes to Indianapolis and support the American Industrial Hygiene Foundation (AIHF) by participating in the 26th Annual AIHF Fun Run/Walk at AIHce 2012, sponsored by Eli Lilly and Company. Run 5K or walk 2K on a great course along the Central Canal in Indianapolis.

Participants in the Fun Run/Walk contribute to scholarships for students studying industrial hygiene and related disciplines while enjoying some morning exercise with fellow IHS before a day at AIHce. In the past 30 years, AIHF has awarded more than \$1 million in scholarships to students entering the IH profession.

On-site registration is \$40 and must be completed by Monday, June 18. All registrants must stop by the registration booth at the Indianapolis Convention Center to sign a waiver form and receive a shirt and race number.

You can also show your support for AIHF by purchasing the AIHce 2012 conference pin for a \$10 donation. Order it on the AIHce registration form or stop by the AIHA® booth or Volunteer Collaboration Café. Show your support throughout conference week!

Further details about the AIHF Fun Run/Walk are on the AIHce 2012 website at <http://bit.ly/aihffunrunwalk>. For more information on AIHF, including ways to contribute, visit <http://bit.ly/aihfinfo> or visit the AIHF Fan Page on Facebook at <http://on.fb.me/gowfGF>.



Safety, What Every Business Needs: NAOSH Week 2012

May 6–12, 2012 marks the 10th Annual North American Occupational Safety and Health (NAOSH) Week, which includes Occupational Safety and Health Professional (OSHP) Day (May 9). This year's theme is "Safety, What Every Business Needs."



NAOSH Week occurs every year during the first full week of May and is intended to raise awareness about occupational safety, health and the environment and the OEHS profession. Through its alliance with OSHA, AIHA® is a partner in NAOSH Week. The American Society of Safety Engineers (ASSE) and the Canadian Society of Safety Engineers (CSSE) are also sponsors. For more information, visit www.asse.org/newsroom/naosh.

Chinese Law on Occupational Disease Prompts Letter of Support

In February, AIHA® released an open letter of support for China's new draft law "Diagnosis and Identification of Occupational Disease" to Li Yizhong, director of the State Administration of Work Safety (SAWS) in China. SAWS is the agency responsible for the supervision and regulation of work safety and reports directly to the State Council.

The letter from AIHA President Elizabeth Pullen states: "As an organization dedicated to promoting worker health and safety, AIHA understands that occupational health and wellness is not bound by borders, but an international challenge which must be met with astute leadership and advanced technology. Your efforts to promote occupational health within your own borders will, in turn, promote health and wellness elsewhere."

View the PDF of the letter at <http://bit.ly/aihalettertosaws>.

AIHA's Changing Role in Consensus Standards

At the November 2011 AIHA® Board of Directors Meeting, the Board voted to discontinue its role as a standards developing organization (SDO) for ANSI Standards. These deliberations were part of a broader discussion about ensuring the best use of AIHA resources for advancing the profession and, ultimately, the protection of worker health.



The Board of Directors believes that the best way to effectively impact a wide variety of standards development activities is to spread AIHA's resources across a wider group of activities rather than narrowly focusing on the role of SDO. A narrower focus allows AIHA to participate in a greater variety of standards-related activities and will put AIHA in a better position to influence the future of standards essential to industrial hygiene.

All of the groups directly affected, including the Z88, Z9 and Z10 Committees, were contacted to discuss the decision and to assist with the development of an appropriate path forward for those standards. For several months, Board members and staff have been working with the committees to identify possible SDOs to take over as secretariat for the standards and to develop a transition process. In the meantime, AIHA continues to provide support to the ongoing work of the dedicated committee volunteers.

If you have questions about AIHA standards activities, please contact David Hicks, senior manager, Volunteer Engagement at dhicks@aiha.org.



Washington Insider Aaron Tripler Now on the Synergist® Blog

The Synergist® is pleased to announce that AIHA® Government Affairs Director Aaron Tripler, our Washington Insider, is now regularly contributing to the Synergist blog. Check the blog periodically for Aaron's takes on public policy, news from Capitol Hill, updates on federal OHS matters and more. To read the Synergist blog, visit www.aiha.org/synergistblog. Aaron's first post on the president's FY13 budget is available at <http://bit.ly/presidentsfy13budgetdoa>.



Winners' Circle

James D. Blando, PhD, is the fourth-quarter winner of the Member-Get-a-Member (MGAM) campaign drawing. He received a \$250 American Express gift card. Denise A. Pitts, CIH, CSP, won the grand prize: free registration, airfare and hotel for AIHce or PCIH.

Help advance a colleague's career and strengthen your professional community by sharing your experience as an AIHA member. To learn more about how you can be a MGAM prize winner, visit <http://bit.ly/aihamgam>.

Online Synergist

Visit www.aiha.org/SynergistCommunity to read more about these and other AIHA news items.

May 6–12	North American Occupational Safety and Health (NAOSH) Week 2012: Safety, What Every Business Needs.
May 9	Occupational Safety and Health Professional (OSHP) Day.
May 30	Advance registration deadline for AIHce 2012.
June 16–21	AIHce 2012: Redefining Our Future, in Indianapolis, Ind.

AIHA® Accolades

Judson Kenoyer, CIH, CHP, was recently named manager of the Dade Moeller Training Academy and will be based in the company's Oak Ridge, Tenn. location. The academy specializes in radiation and occupational safety training. Kenoyer has been a senior-level employee with Dade Moeller for 10 years.

Loren Anderson, CIH, ROH, joined Golder Associates as the Global Environmental Health & Safety (EHS) Services Leader. Golder Associates is a global engineering, construction and technical services company. Anderson recently retired after 25 years with PPG Industries Inc. as Global Manager of Industrial Hygiene and Occupational Health.

Lydia Renton, CIH, ROH, was elected chair of the American Board of Industrial Hygiene (ABIH). She is a senior partner of WESA, Inc., an occupational hygiene and safety, hydrogeological and engineering consulting firm located in Canada. Renton has served on the ABIH Board since 2009.

AIHA members Scott Schneider, CIH, and Steven Fess, CIH, CSP, were both quoted in a recent NPR article titled "New Silica Rules Languish In Regulatory Black Hole." The article addresses OSHA's proposed rule on silica, which, as of March 1, had been under review at the Office of Management and Budget (OMB) for more than one year. Read the article at <http://n.pr/silicarule>.

Product Features

ADVERTISEMENT ■ NOISE

3M™ Sound Detector SD-200

Introducing the 3M™ Sound Detector SD-200, a compact, lightweight sound level meter that provides advanced integration at an exceptional value. The SD-200 includes key features for the assessment of workplace noise levels, including integration, which computes the average sound pressure level, and a rechargeable battery. For more information, visit www.3M.com/SoundDetector.



Circle Fax-back Card No. 20

Benson Medical Instruments Hearing Conservation Software

Benson Medical Instruments' Solo™ Occupational DBMS produces reports, questionnaires and notification letters in 18 different languages based on individual test results; shares data over a network with multiple users; customizes data fields and look-up tables; and calculates impairments, standard threshold shifts, recordable shifts and medical referrals. Visit www.bensonmedical.com.



Circle Fax-back Card No. 21

Brüel & Kjær Noise Sentinel

Don't risk losing your operating license because of noise—let us take away the headache of managing noise compliance. Find it time-consuming and costly to monitor noise? Our web-based noise monitoring service, Noise Sentinel, makes it easy. For more information, contact noisesentinel@bksv.com, or visit www.bksv.com/noisesentinel.



Circle Fax-back Card No. 22

Casella USA CEL-630 series

The CEL-630 series of real-time data logging sound level meters offers noise measurement in full color. Measure everything at once without choosing setup. Record data into 1 GB memory for up to 2.5 years continuously. Great for IH and environmental noise surveys. For more information, contact (800) 366-2966 or visit www.casellausa.com.



Circle Fax-back Card No. 23

Kinetics Noise Control, Inc. Outdoor Sound Curtain (KNC-ENV)

Kinetics Noise Control Sound Curtains are modular, reinforced limp-mass and quilted fiberglass composites that absorb and block airborne noise emanating from outdoor equipment and construction. UV- and weather-resistant, Kinetics Sound Curtains are a durable and economical noise control solution. For more information, visit www.kineticsnoise.com—keyword Curtains.



Circle Fax-back Card No. 24

Moldex JETZ™ Reusable Earplugs

Brightly colored JETZ™ reusable earplugs feature unique, high-visibility green swirls and optional green cord. The extra soft material provides all-day comfort, gently sealing the ear canal for serious protection without excessive pressure. A sharp price point makes JETZ™ the ideal choice for cost-effective hearing protection. For more information, visit www.moldex.com.



Circle Fax-back Card No. 25

OHD OHD/Cirrus Research Optimus™ Sound Level Meter

Introducing the new OHD/Cirrus Research Optimus™ RTA Sound Level Meter. The high resolution color OLED display auto adjusts for any lighting condition. Don't worry about wrong settings: the Optimus measures data in one measurement, including the entire 120 dB dynamic range. Voice tag audibly notates the measurement and downloads to the included software.



Circle Fax-back Card No. 26

Silvent North America Low Noise Air Nozzles, Safety Air Guns and Pneumatic Silencers

Silvent has designed a line of compressed air blow-off products to reduce noise, lower energy costs, and improve safety. Silvent uses patented air nozzle technology and application knowledge to provide a solution that can help lower noise 10+ dB(A). For further information, call (800) 263-5638 or visit www.Silvent.com.



Circle Fax-back Card No. 27

To obtain further information on the listed products and companies, please circle the numbers on the fax-back card (p. 37) that correspond to the new products.

Publication of this material does not constitute endorsement by AIHA.



CareerAdvantage Development Fair 2012

Are You in the Market for a New Job?

Stop by the **CareerAdvantage** Development Fair at AIHce 2012 and get the tools you need to begin building or enhancing your career today.

Employers: For Development Fair Packages or sponsorship opportunities, contact AIHA Career and Employment Services at 703-849-8888 or visit careeradvantage.aiha.org.

Monday, June 18 – Wednesday, June 20
Indiana Convention Center
AIHce 2012

AIHce 2012



June 16–21 Indianapolis www.aihce2012.org

Advance Registration Deadline is May 30.

Don't miss your last opportunity to save on registration. Register today at

www.aihce2012.org.



CO-SPONSORED BY
AIHA* & ACGIH*

THE PREMIER CONFERENCE AND
EXPO FOR OEHS PROFESSIONALS



Synergist Fax-Back Card

The Reader Service Card is now a FAX-BACK card. Use this card to obtain more information about the products and services advertised in this issue. You could win a \$200 AMEX Gift Card.

FILL OUT AND FAX THIS PAGE TO 410-584-8351.

Please send me free information on items circled.

Fax completed card by **June 30, 2012**, to enter to win a \$200 AMEX gift card. No purchase is necessary.

FB#	Advertiser	Page	FB#	Advertiser	Page
6	3M™	11	19	Quest Technologies, a 3M™ company	27
18	A&B Labs	23	11	Raeco Rents	16
2	ALS Laboratory Group	3	9	SKC Inc.	15
5	Assay Technology	9	3	Thermo Scientific	5
15	Bowen EHS	19	28	TSI Inc.	Cover 3
13	Crowcon Detection Instruments Ltd	17	10	University of Medicine and Dentistry of NJ	16
1	EMSL Analytical	Cover 2	Product Features		
29	EMSL Analytical	Cover 4	20	3M™	36
12	Gasmet Technologies Inc.	17	21	Benson Medical Instruments	36
14	Interactive Safety Products	18	22	Brüel & Kjær	36
7	Kinetics Noise Control	14	23	Casella USA	36
4	NEXTTEQ LLC	7	24	Kinetics Noise Control, Inc.	36
8	Occupational Health Dynamics	14	25	Moldex	36
17	On-Site Instruments	21	26	OHD	36
16	Pure Earth Environmental Laboratory	19	27	Silvent North America	36

1—Type of firm:

- 1 Manufacturer
- 2 Consultant
- 3 School/College
- 4 Hospital
- 5 Government

2—Professional function:

- A Administration/Mgmt.
- B Marketing/Sales
- C Industrial Hygienist
- D Physician
- E Nurse
- F Environ. Specialist
- G Safety Specialist
- H Health Specialist
- I Res./Development
- J Purchasing Agent

3—Purchasing authority:

- 1 Recommend
- 2 Specify
- 3 Approve

4—Number of employees:

- A Under 100
- B 100 to 500
- C 500 to 1,000
- D Over 1,000

5—This inquiry is for:

- A Immediate Purchase
- B Future Project

6—This issue is addressed to:

- A Myself
- B Someone else

7—Please have a salesperson contact me

- A Yes
- B No

8—Select the primary type of products you recommend, specify, and/or buy in your job (check all that apply):

- A All of the following
- B Air Sampling Equipment
- C Direct Read. Equipment
- D Respiratory Protection
- E Protective Clothing
- F Medical/Occ. Health
- G Environ./Waste Control
- H Training/Education
- I Safety Equipment
- J Asbestos Abatement
- K Computer Software

Please type, print or affix self-addressed label from front mailing label.

Name: _____

Title: _____

Company: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone: (_____) _____



Introductions

Gerard Arrotti, CIH, CSP

Introductions presents profiles of industrial hygienists working to protect worker health worldwide. This month we feature Gerard Arrotti, CIH, CSP, who is senior director of Safety and Sustainability at ESPN, Inc. in Bristol, Conn. Arrotti manages the global safety, sustainability and risk management programs. During his time at ESPN, he has developed a crisis management plan that effectively addresses all hazards within the organization. Under his direction, the team at ESPN had a Lost Workday Injury Rate of 0.12 in 2011 and was recognized by the National Weather Service as a StormReady Community.

Before working at ESPN, Arrotti was the manager of safety and health at ABC, Inc. in New York City.

Arrotti received a BS in biology from Iona College and an MS in environmental health science from New York Medical College. He can be reached at (860) 766-7139 or Gerard.Arrotti@espn.com.

What are the most significant hazards facing workers in the sports programming industry? Many people probably think the sports programming industry doesn't have any significant hazards, but there are some considerable ones. When we're broadcasting a show, we're often in another company's venue—a venue that we have limited control over. We frequently have to place cameras in high areas, so there are risks associated with fall hazards.

ESPN's main campus has its own electrical distribution systems, so there are significant hazards working around and with high voltages, though now we've essentially eliminated most of those risks. Additionally, we've done a full arc flash survey of the campus. We still have some lockout/tagout issues on our main campus, and out on the road as well, but the most significant hazard overall is probably falls.

How do you manage the challenges of working at venues that you have limited control over? Typically we're not the only folks who are taping in these venues—there are other entities as well: the major networks like CBS, FOX, NBC, TNT. There's a consortium through a trade organization called the Sports Video Group. Under that, we have a group of safety professionals, representatives from each of the networks, called the Sports Production Safety Group. The role of that organization is to promote safety, come up with consensus standards and educate venues on liability issues and safety issues. It's provided a lot of momentum in correcting many situations at the venues we work in.

Please describe the Crisis Management Plan you've developed at ESPN.

The crisis management plan is an approach to any type of crisis or peril where we have an emergency operation center (EOC), a committee made up of different members from different parts of the company to really manage a crisis. We strive to make them very proficient in doing that, so we have routine and regular exercises every year with the EOC team. We're constantly practicing and revising our plans. We have procedures for responding to workplace violence issues, snowstorms—basically every different type of peril, there's a process already established and well entrenched so that if something happens, we're on it, people know what their roles are and then they get guidance from the EOC as we get deeper into the crisis.

What changes have you seen in safety and health at ESPN over the years?

I think our program in general has matured. We've gotten better at identifying and mitigating hazards, and I think a lot of it comes from our collaboration with other departments. We have established relationships with partners within the organization, and they know we're not there to prevent them from doing their jobs; we're there to improve their ability to do their jobs and do them safely. We've built our department's credibility over time, and I think people know and trust us. Your safety program can never mature if you don't establish credibility and you don't build relationships with other folks within your organization. 🧰

Real-Time Solutions for Industrial Hygiene Professionals

The full line of TSI health and safety instruments are designed to accurately and reliably measure a wide variety of industrial hygiene parameters.



DUSTTRAK™ & SIDEPAK™ Aerosol Monitors

- Battery operated, data-logging, light scattering laser photometers
- Ideal for personal exposure (AM510) and workplace (DUSTTRAK) monitoring
- Real-time mass concentration readings
- Measures aerosol contaminants such as dust, smoke, fumes and mists



PORTACOUNT® PRO and PRO+ Respirator Fit Testers

- Real-time fit factor for training on proper donning procedures and ensuring fit prior to testing
- Easy, stand alone operation with touch screen interface
- OSHA-compliant to fit test all types of respirators
- Trustworthy results with a quantifiable fit factor reading



Primary Calibrators

- Volumetric flow rate displayed continuously for real-time adjustments
- Battery powered, compact and lightweight
- Field portable—use the same primary calibrator for adjustment, calibration and periodic checks
- Accurate to +/- 2% of reading

VISIT TSI at AIHce 2012, TSI booth #700.

TSI Incorporated
Tel: 1 800 874 2811 Web: www.tsi.com/IH



Circle Fax-back Card No. 28

What's Hiding in YOUR SAMPLE?



EMSL's Material Science Division can provide SEM Particle and Elemental X-Ray Analysis of Air-O-Cell CSI Cassettes for complete IAQ Investigations

Debris can be so much more than just a number, it may reveal the source of contamination. There are many common non biological particles hiding in sample debris that can not be identified through optical examination ...

Don't miss a thing, call the Laboratory Testing Experts!



EAST COAST
800.220.3675

WEST COAST
866.798.1089



Air-O-Cell
CSI
10 Pack
\$95
#8715320

EMSL ANALYTICAL, INC.
LABORATORY · PRODUCTS · TRAINING

www.emsl.com