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2003 美國工業衛生研討暨展覽會

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主辦機關:

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關鍵詞: 室內空氣品質，黴菌，直讀式儀器

內容摘要: 本次研討會收集彙整以下二大工業安全衛生主題提供本組及相關人員參考。一、室內空氣品質(IAQ, indoor air quality)越來越受重視，黴菌對個人造成流鼻水(sneezing)、咳嗽(coughing)等主訴症狀，居家環境因水管滲漏、潮溼等造成纖維性物質(地毯、家具及衣物等)滋生黴菌。目前已有針對空氣(air)、物體表面(如地毯)、大體積(bulk)樣品之採樣方式。此次Melinda Ballard (Keynote speaker) 以民間研究者立場發表黴菌對個人及環境之影響，會中亦有多篇論文、壁報發表、展覽會多家廠商之主力推展產品。二、直讀式儀器是可攜帶性之毒性氣體偵測器，除了即時偵測一般還附加警告聲響提醒使用者，新產品朝體積更小及使用更不費力、可電腦連線下載記錄數值發展。

本文電子檔已上傳至出國報告資訊網

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摘要

本次研討會收集彙整以下二大工業安全衛生主題提供本組及相關人員參考。一、室內空氣品質(IAQ, indoor air quality)越來越受重視，黴菌對個人造成流鼻水(sneezing)、咳嗽(coughing)等主訴症狀，居家環境因水管滲漏、潮溼等造成纖維性物質(地毯、家具及衣物等)滋生黴菌。目前已有針對空氣(air)、物體表面(如地毯)、大體積(bulk)樣品之採樣方式。此次Melinda Ballard (Keynote speaker)以民間研究者立場發表黴菌對個人及環境之影響，會中亦有多篇論文、壁報發表、展覽會多家廠商之主力推展產品。二、直讀式儀器是可攜帶性之毒性氣體偵測器，除了即時偵測一般還附加警告聲響提醒使用者，新產品朝體積更小及使用更不費力、可電腦連線下載記錄數值發展。

關鍵詞: 室內空氣品質、黴菌、直讀式儀器

壹、前言

美國工業衛生研討暨展覽會（American Industrial Hygiene Conference & Exposition, AIHCE）乃由美國工業衛生學會(American Industrial Hygiene Association, AIHA)及美國工業衛生師協會(American Conference Governmental Industrial Hygienist, ACGIH)共同主辦，已有六十三年歷史，為美國職業安全衛生界年度大事，有來自全球的工業安全與衛生、環境工程等相關專業人士參加。

本屆大會自五月十日至五月十五日在美國德州達拉斯市會議中心(Convention Center, Dallas)舉行。今年的大會主題為「航向不知名國度」(Navigating uncharted territory)，在充滿不確定性挑戰的今日(如今年的SARS疫情)，AIHce為您提供最即時OEHS專業知識，來面對不確定性挑戰，是指引您航向未來的依靠。

貳、本文

大會自八日開始進行在職訓練課程 (Professional Development Courses, PDCs)，內容包含暴露風險評估、生物偵測、黴菌(mold)、風險評估、採樣及實驗室分析等等(35 種領域，詳見附件二)，提供工業衛生管理人員在職訓練的最佳機會。其中最熱門的課程有 1.室內空氣中微生物健康影響、採樣策略及結果分析(Microorganisms in Indoor Air: Health Complaints, Sampling Strategies, and Interpretation) 2.工業衛生看微生物(Microbiology in the Real Industrial Hygiene World) 3.黴菌防治工作計畫(Designing Mold Remediation Work Plans) 4.工業衛生師溝通及解決 IEQ 技巧(What Industrial Hygienists Need to Know About Building & Construction to Identify and Resolve IEQ Problems, Leadership, Communication and Management Skills for the HSE Professional) 5.噪音控制 (Noise Control Engineering)等課程都報名額滿。

配合本屆大會主題大會舉辦三場專題演講 (Keynote Speech)，邀請美國勞工部助理國務卿－職業安全衛生署 (OSHA) 署長 John L. Henshaw 發表美國政府在促進勞工安全衛生政策上的作為 (Navigating uncharted territory! Government)；美國職業安全衛生研究所(NIOSH)總裁 John Howard 發表 NIOSH 研究方針及重點 (Navigating uncharted territory! Research)；Policyholder of America 總裁以民間研究者立場發表她在居家黴菌研究之領域 (Navigating uncharted territory! The public)。

除以上專題演講外，本次大會專業研討形式有(1)論文發表 (Platform)、(2)座談會 (Forum)、(3)案例討論 (Case Study)、(4)環境安全衛生專題 (EHS Crossover Program)、(5)壁報張貼 (Poster Session)等方式進行及(6)得獎 (Award)-本所分析組石組長東生於此次大會獲頒 William P. Yant Award 獎章，表揚非美國地區工業衛生及相關領域傑出貢獻人員。

論文發表乃針對特定研究領域進行20分鐘專題報告，共計有280篇論文涵蓋氣膠、空氣採樣器性能評估、生物氣膠、生物偵測、社區環境安全與衛生、電腦在工業衛生上之應用、營造安全衛生設備與管理、噪音與聽力損失、皮膚吸收暴露評估、人因工程應用、暴露評估策略、氣體與蒸汽偵測儀器、室內空氣品質、國際工業衛生、實驗室安全衛生、毒物動力學模式等三十五項研究領域（附件一）。

座談會中邀請專家提供特定職業安全衛生研究資訊，與出席人員進行專題討論，強調主講人與聽眾間的互動；計有82場次，三百多項討論主題。案例討論提供實務經驗，共計有五場次，討論45件職業安全衛生案例。環境安全衛生專題共有八場次討論會，提供環境相關（非職業性）安全衛生議題之研討。

此外論文海報有上百篇，AIHA與ACGIH相關工業衛生書籍及照片平面展覽示，另有工業安全衛生器材設備、工業安全衛生諮詢服務公司與各大學工業衛生相關研究所等，約有三百個參展攤位。

參、會議心得

本次出席2003美國工業衛生研討暨展覽會主要在於參加“作業環境暴露評估技術”相關研究領域之研討。大會中與本項主題相關之研討領域計有(1)論文發表會：採樣器性能評估、生物偵測、皮膚吸收暴露評估、暴露評估策略、氣體與蒸氣偵測器等；(2)座談會：環境管理系統(ISO14001)；(3)海報：空氣與水之採樣、被動式採樣器、表面採樣及危害評估與危害控制等。(4)展覽會場。就以上相關領域中所參與之研討與收集之資料加以整理如下，。

一、採樣器性能評估

一) 直讀式採樣器

S.Carter(1)等人以personal direct-reading aerosol photometer直讀式儀器於三家煉鋁廠potroom進行現場評估，並和3-stage virtual impactor採樣器進行數據比較。兩項數據比較thoracic fraction相關係數為0.71；respirable fraction相關係數為0.52。利用直讀式儀器來監測作業環境除可對勞工time-activity pattern解讀有幫助，可更真確得知勞工暴露模式(尖峰暴露時間、頻率等)。作者提供直讀式儀器之baseline drift問題，可藉對sensor cleaning常清潔及進行儀器歸零來減少。

N.Lawryk(2)等人發表了可攜帶式 X-ray fluorescence spectrometry 配備密封式X-ray tube 進行金屬相關作業勞工金屬暴露調查。儀器偵測極限($\mu\text{g}/\text{cm}$)：2.0(chromium)；1.5(nickel)；1.0(copper)；1.0(zinc)；0.5(arsenic)；0.6(lead)。此方法可視為一個不錯的篩選的方法(成本不昂貴)。

二) 旋風採樣器(personal respirable cyclone sampler)

S.Trakumas(3)、Y.Wu(4)、B.Samimi(5)等人對旋風採樣器發表三篇相關報告，S.Trakumas對採樣器相關表現進行評估，建議最佳採樣流速為GS-1 cyclone (2.0 L/min)、10mm nylon cyclone(1.7 L/min)、aluminum

cyclone(2.5 L/min)。

將Dorr-Oliver cyclone(respirable particulate)及IOM 採樣器(inhalable particulate)進行採樣器並列(Side-by-side)，於低(1.0 mg/m³)、中(5.0 mg/m³)、高(10 mg/m³)濃度狀況下測試其之相關性，低濃度相關性為0.88；中濃度相關性為0.13；高濃度相關性為0.53。以IOM 採樣器採集inhalable particulate可得到非常可靠的數據；如以Dorr-Oliver cyclone採集respirable particulate將獲得約1/4的數值。所以如需測總粉塵以IOM 採樣；如只需測respirable particulate則以Dorr-Oliver cyclone(10mm nylon cyclone) 採樣。

二、生物偵測(皮膚吸收)

一) Tape-stripping method-皮膚吸收

C.Trent等人(6)以HDI(hexamethylene diisocyanate)暴露勞工進行皮膚吸收之暴露(dermal Tape-stripping technique)，將黏貼膠帶切成(2.5x4 cm)貼在皮膚上2分鐘，膠帶取下時會表皮層(stratum corneum)上HDI，可能會沉積或滲透入。每片膠帶再進行溶出及衍生化反應(HDIU)，MS分析。另Y. Chao等人(7)報告以這方法進行軍方人員(戰鬥機員、飛機維修人員)JP-8暴露，將橈關節以上4個位置進行Tape-stripping，2分鐘，連續採樣5次，這是個可行評估方式。

二) 生物偵測指標

1. formaldehyde-induced DNA adduct

甲醛(Formaldehyde, FA)可能導致鼻咽癌，而由FA引起的DNA修飾現象可以當作暴露生物偵測標的(Biomarker)。Zhong(8)利用高效能液相層析(HPLC)比較紫外光技術在FA修飾DNA偵測的應用。正常的與FA修飾DNA在C18逆相分離管，以5Mm醋酸銨及0-6%甲醇梯度流洗，可有效的分離為N⁶-dA、N²-dG及N⁴-dC。Intra-與Inter-assay的變異係數(CV)在6-13%之間。

2. 以尿液中原態desflurane為開刀房desflurane暴露指標(9)

desflurane主要由肺臟排除，顯少經過代謝(0.02%)。如以尿液desflurane(D (Cu, µg/L)進行暴露(CI, ppm)相關性。作者提出以下相關

$$\text{Log D (Cu, µg /L)} = 0.191 + 0.922 * \text{LogCI} ; r^2 = .85。$$

三、氣體與蒸氣偵測器

一)NIOSH method 3800個人採樣方法評估(10)

FTIR(Fourier Transform InfraRed Spectroscopy)能同時偵測多種化合物，利用化合物對IR吸光進行化合物定性與定量分析，為非破壞性分析方法。NIOSH method 3800進行個人採樣是非常有效但煩雜。應用在特殊作業採樣評估、評估個人防護具效用、工程控制效用評估等。

四、黴菌採樣方法

一)針對地毯設計的黴菌採樣方法

J.Spurgeon等人(11)建議一個再現性高的黴菌採樣方法

地毯-98 cm²(1.control 2.exterior wall 3.water intrusion)

採樣器-25mm open-faced cassettes (0.8µm MCE filter)

採樣流率-10 lpm

採樣數-20個點，每點採5秒

培養-MEA 培養基

結果-

	control	exterior wall	water intrusion
Total	109	1280	9256
Aspergillus spp.	70	204	692
Penicillium spp.	80	313	7438

單位-CFU/100cm²

二) 空氣樣品黴菌採樣方法

J.Spurgeon等人(12)發表

採樣器-25mm dual-trace cassettes (1.2 µm MCE filter)

採樣時間及流率-短時間 3.5 lpm , 10 分鐘

長時間 1lpm , 60 分鐘

比較參考方法-Graesby-Andersen N6 sampler

短時間 28.3 lpm , 2 分鐘

長時間 28.3 lpm , 10 分鐘

結果-相關性係數0.85

長時間所得數據較少變異較能代表暴露。

肆、結論與建議事項

參加2003AIHce美國工業衛生研討暨展覽會，是工業安全衛生界大事，由全世界來的專業人士齊聚一堂共同分享工業衛生研究發展的新趨勢，並藉由研討會進行經驗的分享，展覽會中各家廠商無不使出渾身解數，提供精巧小禮物來吸引與會來賓，對有興趣來賓並於會後寄上詳盡產品目錄及專業產品資料。

以下是我與會後結論與建議事項：

一、彙整黴菌採樣及鑑定方法提供本所(本組、醫學組及衛生組)將來研究之參考。室內空氣品質(IAQ, indoor air quality)越來越受重視，此次Melinda Ballard (Keynote speaker) 以民間研究者立場發表黴菌對個人及環境之影響，會中亦有多篇論文、壁報發表、展覽會多家廠商之主力推展產品。黴菌對個人造成流鼻水(sneezing)、咳嗽(coughing)等主訴症狀，居家環境因水管滲漏、潮溼等造成纖維性物質(地毯、家具及衣物等)滋生黴菌。目前已有針對空氣(air)、物體表面(如地毯)、大體積(bulk)樣品之採樣方式。研討會中J.Spurgeon等人建議一個針對地毯(物體表面)採樣方法，利用25mm open-faced cassettes (0.8 μ m MCE filter)採樣器，採樣流率-10 lpm，以98 cm²大小的地毯為例，建議採20點(每點採5秒)；另建議一個針對空氣樣品之採樣方法，利用25mm open-faced cassettes (1.2 μ m MCE filter)採樣器，採樣流率-1 lpm，建議採1小時。針對黴菌滋生可採行政策，首先找出並排除室內滋潮源頭、徹底清潔、移除纖維性物質(如地毯)，最後以抗黴菌物質處理。在職訓練課程 (Professional Development Courses, PDCs) 亦有多場有關空氣中微生物及黴菌防治工作計畫。參展攤位中推出相當多黴菌檢驗方法：1.培養方法-快速生長黴菌如Penicillium spp 在培養基上會過度生長；而慢速生長黴菌Stachybotry spp則反之(單位-CFU/m³)。2.鏡檢檢查-以光學顯微鏡直接進行黴菌孢子計數及分類。3.化學分析方法-可進行定量(biomass)，以測定mycotoxin或菌絲、孢子上ergosterol為主，發展出mycostrip可於3-5分鐘立即判讀數值。4.免疫分

析方法-以ELISA定量其中過敏原。5.分子生物學方法-以即時PCR鑑定黴菌種類。

二、拋棄式防護具之新進展。國內因今年SARS疫情而大出風頭之拋棄式吸防護具，今年展覽會場各家廠商皆強調穿戴方便(可調式鬆緊帶)、舒適性及氣密性更佳的附加功能。可更換毒氣吸附罐(cartridge)之呼吸防護具，一直都以設定毒氣吸附更換時程(setting cartridge change schedules)來管理，現在廠商在毒氣吸附罐裡裝入指示劑(real-time end of service life indicator)，當指示劑暴露到特定汙染物即可將指示劑轉變顏色，使用者可從毒氣吸附罐透明處觀察到指示劑顏色，再進行毒氣吸附罐更換。現有H₂S、SO₂已獲得NIOSH認可(approved)。拋棄式手套今年強調以Nitrile為主要材質，Nitrile比傳統乳膠手套可適用於更廣的化學品，也沒有latex protein可能引起使用者過敏，耐磨力也不錯。

三、直讀式儀器之新進展可提供本所參考。on site measurements就是能夠即時反應作業現場有害物空氣中的含量。直讀式儀器是可攜帶性之毒性氣體偵測器，除了即時偵測一般還附加警告聲響提醒使用者，新產品朝體積更小及使用更不費力、可電腦連線下載記錄數值發展。現發展的可攜帶式氣相層析儀(portable GC)除分析時間短(不到2分鐘)，其偵測極限亦可達到ppb濃度。檢知管(detector tube)除可偵測氣態樣品(Freon、halogenated chlorocarbon gas)，亦有直接偵測水溶液樣品之檢知管(sulfides)。如名牌大小的毒性氣體試紙條CHROMAIR[®]甚至不用抽氣幫浦，依氣體擴散原理，專利設計一個穩定的擴散路徑，而不用考慮採樣時間或汙染物濃度即可提供立即及準確之數據。於十分之一至二倍容許濃度間定大概劃出了六個梯度濃度(單位為ppm* hr)，目前約有20項有毒氣體試紙條(氯氣、氯氣、甲醛、汞蒸氣、CS₂、CO、NO₂、SO₂、H₂S、O₃等)。TRACERAIR[®]將活性碳固定在墮性基質上，它擁有高表面積，再依專利設計之被動擴散原理，還有低採樣流速及高採樣流速兩種選擇以應付現場的濃度之多樣性。

伍、參考資料

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3. Performance Assessment of Personal Respirable Cyclone Samplers. *S. Trakumas, P. Hall, SKC Inc., Eighty Four, PA.*
4. Characterizations of the Sampling Performances of Different Personal Samplers in Calm Air. *Y. Wu, D. Evans, J. Vincent, University of Michigan, Ann Arbor, MI.*
5. Comparison of 10 Mm Nylon Cyclone Respirable Dust Sampler With Iom Inhalable Dust Sampler Under Low, Medium, and High Dust Concentrations. *B. Samimi, A. Wahed, San Diego State University, San Diego, CA*
6. Development of a Tape-Stripping Method to Quantify Dermal Exposure to Hexamethylene Diisocyanate During Spray Painting. *C. Trent, L. Nylander-French, L. Ball, A. Gold, H. Koc, The University of North Carolina at Chapel Hill, Chapel Hill, NC.*
7. Dermal Exposure Model for JP-8 Jet Fuel Exposure Using the Tape-Stripping Method. *Y. Chao, L. Nylander-French, University of North Carolina at Chapel Hill, Chapel Hill, NC.*
8. Stability of Formaldehyde-Induced DNA Adduct Biomarkers Using HPLC/UV. *W. Zhong, S. Que Hee, University of California at Los Angeles, Los Angeles, CA*
9. Urinary Excretion of Unmetabolized Desflurane in Operating Room Personnel as an Indicator of Desflurane Exposure: First Results. *S. Ghittori, D. Cottica, A. Alessio, Fondazione Salvatore Maugeri, Pavia, Italy; M. Imbriani, Università di Pavia, Pavia, Italy*

10. Field Implications of Using Extractive FTIR Spectrometry to Collect Personal Exposure Data. *S. Lowman, Mid-South Testing Inc., Decatur, AL*
11. A Reproducible and Quantitative Method for Sampling Fungal Contaminants in Carpets. *J. Spurgeon, Bayshore Environmental Inc., Placentia, CA*
12. A Method for Collecting TWA Samples of Airborne Fungi and Fungal Spores. *J. Spurgeon, Bayshore Environmental Inc., Placentia, CA.*

附件二 Technical Sessions by Topic

AIHce 2003 – Choose from a Variety of Formats

In addition to a broad menu of topics, AIHce provides information in differing formats, both oral and visual. Session types range from the roundtable “point/counterpoint” discussions, to platform sessions that provide supporting opinions on similar topics, to posters offering cutting-edge research. All formats present information that is both stimulating and informative.

- **RT = Roundtables** are special interest sessions comprised of invited speakers presenting controversial or informative issues to include audience participation and questions.
- **PO = Podium sessions** are 20-minute abstract and case study presentations on a particular topic and include research or practical information.
- **CR = EHS Crossover programs**, delivered by one or two speakers, provide information on non-industrial hygiene topics.
- **PS = Poster sessions** are abstract presentations in visual format. Authors are scheduled to answer questions during selected two-hour periods.

Aerosols

- PO 123—**Aerosols** Wednesday, 5:30 p.m.–8:50 p.m.

Agricultural Health and Safety

- PO 115—**Agricultural Health and Safety** Wednesday, 10:00 a.m.–Noon

Air Sampling Instrument Performance

- PO 127—**Air Sampling Instrument Performance** Thursday, 8:00 a.m.–11:20 a.m.

Biological Monitoring

- RT 202—**Improving Responses to Bioterrorism: Lessons Learned from the Anthrax Attacks** Monday, 10:30 a.m.–12:30 p.m.
- PO 124—**Biological Monitoring: Dermal Exposures** Wednesday, 6:00 p.m.–9:00 p.m.

Bioaerosols and Biosafety/Biotechnology

- RT 229—**Design and Operation of Microbiological Laboratories in a Post 9/11 World** Tuesday, 2:00 p.m.–6:00 p.m.
- RT 230—**What's New With Safer Medical Devices?** Wednesday, 10:00 a.m.–Noon
- PO 119—**Mold Investigation Strategies** Wednesday, 1:00 p.m.–3:20 p.m.
- PO 122—**Mold Sampling Methods** Wednesday, 3:30 p.m.–5:50 p.m.

- **PO 125—Bioaerosols, Terrorism, and Related Concerns** Thursday, 8:00 a.m.–10:20 a.m.
- **RT 248—A Rational Approach to Occupational Medicine in Biotechnology Research** Thursday, 8:00 a.m.–Noon

Chemical-Biological Terrorism and Emergency Response

- **RT 202—Improving Responses to Bioterrorism: Lessons Learned from the Anthrax Attacks** Monday, 10:30 a.m.–12:30 p.m.
- **RT 209—IH Issues With Chemical-Biological Terrorism: Monitoring in the Field** Monday, 2:00 p.m.–4:30 p.m.
- **CR 310—The Importance of Effective Negotiation Skills and Strategies in EH&S Management** Tuesday, 10:30 a.m.–Noon
- **RT 224—Responding to a Terrorist Attack: Perspectives From the Brentwood Postal Facility** Tuesday, 2:00 p.m.–5:00 p.m.
- **RT 234—IH Issues With Chemical-Biological Terrorism: PPE/Respiratory Protection** Wednesday, 1:00 p.m.–3:30 p.m.
- **CR 324—Emergency Preparedness and Business Continuity Planning** Thursday 8:00 a.m.–9:30 a.m.
- **PO 125—Bioaerosols, Terrorism, and Related Concerns** Thursday 8:00 a.m.–10:20 a.m.
- **PO 131—Industrial Hygiene Role in Terrorism Response Activities: The NIOSH Experience.** Thursday, 8:00 a.m.–11:00 a.m.
- **CR 327—The Industrial Hygienists Role in Emergency Preparedness Planning** Thursday, 10:00 a.m. –11:30 a.m.
- **RT 252—Enhancing Workplace Preparedness and Emergency Response to Address an Age of Terrorism** Thursday, 1:00 p.m.–3:30 p.m.

Communication and Training Methods

- **RT 206—Safety and Health Training Tips for the Industrial Hygienist** Monday, 10:30 a.m.–12:30 p.m.
- **RT 212—Bridging the Communication Gap Between the Migrating Workforces** Monday, 2:00 p.m.–5:00 p.m.
- **RT 221—Occupational Safety and Health History: The Building Blocks for the Practice of OSH in the 21st Century** Tuesday, 10:30 a.m.–12:30 p.m.
- **PO 113—Communication and Training** Tuesday, 2:00 p.m.–5:00 p.m.
- **RT 238—How to Get Published** Wednesday, 1:00 p.m.–4:30 p.m.
- **CR 322—The “Visually Instructive Plant:” Reduce Accidents and Increase Productivity Through an Organized Facility Marking Program** Wednesday, 3:00 p.m.–4:30 p.m.
- **CR 326—Motivate Others to Change! Accelerate CHANGE-ability and Master Resistance** Thursday, 8:00 a.m.–9:30 a.m.
- **CR 333—Reducing Human Error With Better Work Instructions** Thursday, 3:00 p.m.–4:30 p.m.

Community EHS and Social Concerns

- **RT 210—OSHA Enforcement and its Impact on Health and Safety: New Challenges, New Possibilities** Monday, 2:00 p.m.–4:30 p.m.
- **PO 104—Community Environmental, Health and Safety, and Social Concerns** Monday, 2:00 p.m.–5:00 p.m.
- **RT 212—Bridging the Communication Gap Between the Migrating Workforces** Monday, 2:00 p.m.–5:00 p.m.

- **RT 220—Integrating Green Design and Industrial Hygiene Practices: Simultaneously Reducing Risks to the Worker and the Environment** Tuesday, 10:30 a.m.–12:30 p.m.
- **RT 232—Killing Us Softly: An International Perspective on Hazards Associated with the Changing Organization of Work** Wednesday, 10:00 a.m.–Noon.
- **RT 246—Reactive Chemical Hazards: A Problem in Search of a Solution** Thursday, 8:00 a.m.–11:00 a.m.
- **RT 249—Young Workers: The Promise and the Challenge** Thursday, 8:00 a.m.–Noon

Computer Applications

- **RT 205—Using Internet Technology as a Safety and Health Communications Tool** Monday, 10:30 a.m.–12:30 p.m.
- **PO 106—Computer Applications** Monday, 2:00 p.m.–5:20 p.m.
- **RT 215—PDA Applications for the Working Industrial Hygienist** Monday, 2:00 p.m.–6:00 p.m.
- **CR 315—Improving Incident Investigation Effectiveness Through Computerized Methods** Wednesday, 10:00 a.m.–11:30 a.m.

Construction and Equipment

- **PO 102—Construction** Monday, 10:30 a.m.–12:30 p.m.
- **CR 305—Road Construction Safety Training: A New Approach** Monday, 2:00 p.m.–3:30 p.m.
- **CR 309—Scaffold Safety** Tuesday, 10:30 a.m.–Noon
- **CR 316—Construction Safety in the New Millennium** Wednesday, 10:00 a.m.–11:30 a.m.
- **CR 332—Construction and Defect Litigation** Thursday, 3:00 p.m.–4:30 p.m.

Consulting

- **RT 216—The Industrial Hygiene Consultant Forum** Tuesday, 10:30 a.m.–12:30 p.m.
- **RT 250—Navigating Through the Environmental Credentialing Organizations** Thursday, 1:00 p.m.–3:00 p.m.

Engineering

- **PO 128—Engineering and Control Technology** Thursday, 8:00 a.m.–11:20 a.m.
- **RT 254—An Update on the Best Practices and Control Technologies for Bioaerosols** Thursday, 1:00 p.m.–4:00 p.m.

Environmental

- **CR 301—Sustainability Toolbox: Sample Tools That Add Value in Making Sustainability Decisions** Monday, 10:30 a.m.–Noon
- **RT 213—Navigating in Uncharted Territory: Environmental, Health and Safety Issues in the Modern Laboratory** Monday, 2:00 p.m.–5:00 p.m.
- **CR 308—Practical Implementation of an ISO14001 Environmental Management System** Tuesday, 10:30 a.m.–Noon

- **CR 310—The Importance of Effective Negotiation Skills and Strategies in Environmental, Health and Safety Management** Tuesday, 10:30 a.m.–Noon
- **RT 220—Integrating Green Design and Industrial Hygiene Practices Simultaneously Reducing Risks to the Worker and the Environment** Tuesday, 10:30 a.m.–12:30 p.m.
- **CR 311—On the Horizon: Sustainable Development** Tuesday, 2:00 p.m.–3:30 p.m.
- **CR 326—Motivate Others to Change! Accelerate CHANGE-ability and Master Resistance** Thursday, 8:00 a.m.–9:30 a.m.
- **RT 246—Reactive Chemical Hazards: A Problem in Search of a Solution** Thursday, 8:00 a.m.–11:00 a.m.
- **RT 250—Navigating Through the Environmental Credentialing Organizations** Thursday, 1:00 p.m.–3:00 p.m.
- **RT 253—The Application of Computational Fluid Dynamics (CFD) to Laboratory and Hood Design** Thursday, 1:00 p.m.–4:00 p.m.

Ergonomics

- **RT 203—Healthcare Ergonomics: Restoring Institutions, Workers, and Patients to Health** Monday, 10:30 a.m.–12:30 p.m.
- **PO 108—Ergonomics 1: Evaluation and Best Practices** Tuesday, 10:30 a.m.–12:30 p.m.
- **RT 223—Leveraging Information Technology for Ergonomics** Tuesday, 2:00 p.m.–4:30 p.m.
- **PO 118—Ergonomics 2: Lifting and Musculoskeletal Issues** Wednesday, 10:00 a.m.–Noon
- **RT 235—Ergonomically Designed Products: Which Ones Work and Which Ones Don't?** Wednesday, 1:00 p.m.–3:30 p.m.
- **RT 251—Cost-Effective Ergonomics Improvements** Thursday, 1:00 p.m.–3:30 p.m.

Exposure Assessment Strategies

- **RT 211—Estimating Past Exposures: The Scientific Basis for Reconstructing Asbestos Dose for Groups and Individuals** Monday, 2:00 p.m.–4:30 p.m.
- **PO 105—Exposure Assessment Strategies 1** Monday, 2:00 p.m.–5:00 p.m.
- **RT 219—Practical Applications of the AIHA Exposure Assessment Strategy in Small- and Medium-Sized Workplaces** Tuesday, 10:30 a.m.–12:30 p.m.
- **RT 226—Implementation of Exposure Assessment Strategies in Larger Companies** Tuesday, 2:00 p.m.–5:00 p.m.
- **RT 231—Practical Approaches to Dermal Exposure Assessment** Wednesday, 10:00 a.m.–Noon
- **RT 237—Aircraft Cabin Air Quality: Linking Exposures to Health Effects** Wednesday, 1:00 p.m.–4:00 p.m.
- **RT 242—Practical Applications of Mathematical Exposure Modeling in Exposure Assessment and OSHA Compliance** Wednesday, 6:00 p.m.–9:00 p.m.
- **PO 126—Exposure Assessment Strategies 2** Thursday, 8:00 a.m.–10:40 a.m.

Gas and Vapor Detection

- **RT 209—IH Issues With Chemical-Biological Terrorism: Monitoring in the Field** Monday, 2:00 p.m.–4:30 p.m.

- **PO 110—Gas and Vapor Detection** Tuesday, 10:30 a.m.–12:30 p.m.
- **RT 224—Responding to a Terrorist Attack: Perspectives From the Brentwood Postal Facility** Tuesday, 2:00 p.m.–5:00 p.m.
- **RT 234—IH Issues With Chemical-Biological Terrorism: PPE/Respiratory Protection** Wednesday, 1:00 p.m.–3:30 p.m.

Healthcare

- **RT 203—Healthcare Ergonomics: Restoring Institutions, Workers, and Patients to Health** Monday, 10:30 a.m.–12:30 p.m.
- **RT 230—What's New with Safer Medical Devices?** Wednesday, 10:00 a.m.–Noon

Indoor Environmental Quality

- **RT 201—Government Affairs Involvement in Mold** Monday, 10:30 a.m.–12:30 p.m.
- **RT 214—The Importance of Industrial Hygienists in Mould Assessment and Remediation** Monday, 2:00 p.m.–5:00 p.m.
- **RT 217—Federal Lead Programs Update** Tuesday, 10:30 a.m.–12:30 p.m.
- **PO 111—Mold Field Studies** Tuesday, 10:30 a.m.–12:50 p.m.
- **RT 222—Building Sciences 101: Moisture Control Problems = Mold** Tuesday, 2:00 p.m.–4:30 p.m.
- **PO 112—General IEQ Issues** Tuesday, 2:00 p.m.–4:40 p.m.
- **PO 119—Mold Investigation Strategies** Wednesday, 1:00 p.m.–3:20 p.m.
- **PO 122—Mold Sampling Methods** Wednesday, 3:30 p.m.–5:50 p.m.
- **RT 241—New Development of Advanced Technologies of Evaluating and Detecting Fungi and Other Microorganisms Indoors** Wednesday, 6:00 p.m.–9:00 p.m.

Industrial Hygiene General Practice

- **PO 114—Industrial Hygiene General Practice 1** Tuesday, 2:00 p.m.–6:00 p.m.
- **RT 227—TLV® and BEI® Committees: The Decision Making Process** Tuesday, 2:00 p.m.–5:00 p.m.
- **RT 233—American Board of Industrial Hygiene Forum** Wednesday, 10:00 a.m.–Noon
- **RT 236—Industrial Hygiene Practices in Coal Mines** Wednesday, 1:00 p.m.–4:00 p.m.
- **RT 238—How to Get Published** Wednesday, 1:00 p.m.–4:30 p.m.
- **RT 240—Glen Williamson Forum: OSHA's Most Interesting Health Cases, 2000–2002** Wednesday, 1:00 p.m.–5:00 p.m.
- **PO 129—Industrial Hygiene General Practice 2** Thursday, 1:00 p.m.–3:40 p.m.

International Affairs

- **CR 304—Global Protection for Traveling Employees** Monday, 10:30 a.m.–Noon
- **RT 204—Challenges Faced by Occupational Health and Safety Professionals in Spanish-Speaking Nations (*in Spanish*)** Monday, 10:30 a.m.–12:30 p.m.
- **RT 218—Canadian Occupational Hygiene Issues** Tuesday, 10:30 a.m.–12:30 p.m.

- PO 117—**International Occupational Hygiene Issues** Wednesday, 10:00 a.m.–Noon
- RT 232—**Killing Us Softly: An International Perspective on Hazards Associated with the Changing Organization of Work** Wednesday, 10:00 a.m.–Noon
- RT 236—**Industrial Hygiene Practices in Coal Mines** Wednesday, 1:00 p.m.–4:00 p.m.
- RT 239—**Integrating Management Systems for Increased Efficiency of Your Operation** Wednesday, 1:00 p.m.–5:00 p.m.
- RT 245—**International Occupational Hygiene: An Update on Developments and Outreach Activities Throughout the World, 2002–2003** Thursday, 8:00 a.m.–11:00 a.m.
- RT 255—**External Drivers for Sustainability: Making Sense of the Indices, Investment Funds, International Reporting Framework and Regulatory Incentives** Thursday, 1:00 p.m.–4:30 p.m.

Laboratory Health and Safety

- RT 213—**Navigating Uncharted Territory: Environmental, Health and Safety Issues in the Modern Lab** Monday, 2:00 p.m.–5:00 p.m.
- RT 229—**Design and Operation of Microbiological Laboratories in a Post 9/11 World** Tuesday, 2:00 p.m.–6:00 p.m.
- RT 253—**The Application of Computational Fluid Dynamics (CFD) to Laboratory and Hood Design** Thursday, 1:00 p.m.–4:00 p.m.

Law

- RT 217—**Federal Lead Programs Update** Tuesday, 10:30 a.m.–12:30 p.m.
- RT 247—**Mold: Health Effects, Science, and the Law** Thursday, 8:00 a.m.–11:00 a.m.
- CR 332—**Construction and Defect Litigation** Thursday, 3:00 p.m.–4:30 p.m.

Lead

- RT 217—**Federal Lead Programs Update** Tuesday, 10:30 a.m.–12:30 p.m.
- PO 116—**Lead** Wednesday, 10:00 a.m.–Noon

Management & Leadership

- CR 302—**Workers' Compensation Insurance for EH&S Professionals** Monday, 10:30 a.m.–Noon
- CR 303—**Stress, the Hidden Enemy of Safety, Health, and Environmental Improvement** Monday, 10:30 a.m.–Noon.
- PO 107—**Management/Leadership** Monday, 2:00 p.m.–5:40 p.m.
- CR 310—**The Importance of Effective Negotiation Skills and Strategies in Environmental, Health and Safety Management** Tuesday, 10:30 a.m.–Noon.
- CR 317—**Leadership for Health, Safety, and Environmental Excellence With or Without Authority** Wednesday, 10:00 a.m.–11:30 a.m.
- CR 331—**Motivating Management Commitment: The Performance Measure Approach** Thursday, 1:00 p.m.–2:30 p.m.

Mold

- **RT 201—Government Affairs Involvement in Mold** Monday, 10:30 a.m.–12:30 p.m.
- **RT 214—The Importance of Industrial Hygienists in Mould Assessment and Remediation** Monday, 2:00 p.m.–5:00 p.m.
- **RT 216—The Industrial Hygiene Consultant Forum** Tuesday, 10:30 a.m.–12:30 p.m.
- **PO 111—Mold Field Studies** Tuesday, 10:30 a.m.–12:50 p.m.
- **RT 222—Building Sciences 101: Moisture Control Problems = Mold** Tuesday, 2:00 p.m.–4:30 p.m.
- **PO 119—Mold Investigation Strategies** Wednesday, 1:00 p.m.–3:20 p.m.
- **PO 122—Mold Sampling Methods** Wednesday, 3:30 p.m.–5:50 p.m.
- **RT 241—New Development of Advanced Technologies of Evaluating and Detecting Fungi and Other Microorganisms Indoors** Wednesday, 6:00 p.m.–9:00 p.m.
- **RT 247—Mold: Health Effects, Science, and the Law** Thursday, 8:00 a.m.–11:00 a.m.
- **RT 254—An Update on the Best Practices and Control Technologies for Bioaerosols** Thursday, 1:00 p.m.–4:00 p.m.

Noise

- **RT 243—Standards and Support: Federal Initiatives in Hearing Conservation** Wednesday, 6:00 p.m.–9:00 p.m.

Nonionizing Radiation

- **RT 225—Hot Topics in Nonionizing Radiation** Tuesday, 2:00 p.m.–5:00 p.m.

Occupational Epidemiology

- **PO 101—Occupational Epidemiology** Monday, 10:30 a.m.–12:30 p.m.
- **PO 109—Epidemiology/Medicine/Toxicology** Tuesday, 10:30 a.m.–12:30 p.m.
- **RT 237—Aircraft Cabin Air Quality: Linking Exposures to Health Effects** Wednesday, 1:00 p.m.–4:00 p.m.

Occupational Health Standards

- **RT 248—A Rational Approach to Occupational Medicine in Biotechnology Research** Thursday, 8:00 a.m.–Noon

Product Stewardship

- **CR 301—Sustainability Toolbox: Sample Tools That Add Value in Making Sustainability Decisions.** Monday, 10:30 a.m.–Noon
- **RT 255—External Drivers for Sustainability: Making Sense of the Indices, Investment Funds, International Reporting Framework and Regulatory Incentives** Thursday, 1:00 p.m.–4:30 p.m.

Protective Clothing and Equipment

- **RT 207—Choosing the Right Protection to Prevent Hand Injury and Disease** Monday, 10:30 a.m.–12:30 p.m.

- **CR 316—Construction Safety in the New Millennium** Wednesday, 10:00 a.m.–11:30 a.m.
- **PO 120—Personal Protective Clothing and Equipment** Wednesday, 1:00 p.m.–4:00 p.m.
- **CR 329—An Overview of Flame-Resistant Clothing** Thursday, 10:00 a.m.–11:30 a.m.

Regulatory and Standards Issues

- **RT 210—OSHA Enforcement and its Impact on Health and Safety: New Challenges, New Possibilities** Monday, 2:00 p.m.–4:30 p.m.
- **CR 307—A Systematic Approach to Contractor Safety at a Voluntary Protection Program (VPP) Site Through the Application of Basic Process Safety Management Principles** Monday, 4:00 p.m.–5:30 p.m.
- **CR 308—Practical Implementation of an ISO14001 Environmental Management System** Tuesday, 10:30 a.m.–Noon
- **RT 228—OSHA Updates** Tuesday, 2:00 p.m.–5:00 p.m.
- **RT 239—Integrating Management Systems for Increased Efficiency of Your Operations** Wednesday, 1:00 p.m.–5:00 p.m.
- **RT 243—Standards and Support: Federal Initiatives in Hearing Conservation** Wednesday, 6:00 p.m.–9:00 p.m.
- **RT 246—Reactive Chemical Hazards: A Problem in Search of a Solution** Thursday, 8:00 a.m.–11:00 a.m.

Respiratory Protection

- **RT 208—Does Your Hazard Assessment Process Adequately Support Respirator Selection?** Monday, 2:00 p.m.–4:30 p.m.
- **PO 130—Respiratory Protection** Thursday, 1:00 p.m.–4:40 p.m.

Risk Assessment

- **RT 211—Estimating Past Exposures: The Scientific Basis for Reconstructing Asbestos Dose for Groups and Individuals** Monday, 2:00 p.m.–4:30 p.m.
- **PO 121—Risk Assessment** Wednesday, 1:00 p.m.–4:20 p.m.

Safety

- **CR 302—Workers' Compensation Insurance for EH&S Professionals** Monday, 10:30 a.m.–Noon
- **CR 303—Stress, the Hidden Enemy of Safety, Health, and Environmental Improvement** Monday, 10:30 a.m.–Noon
- **CR 305—Road Construction Safety Training: A New Approach** Monday, 2:00 p.m.–3:30 p.m.
- **CR 306—Health and Safety Urban Legends** Monday, 2:00 p.m.–3:30 p.m.
- **CR 307—A Systematic Approach to Contractor Safety at a Voluntary Protection Program (VPP) Site Through the Application of Basic Process Safety Management Principles** Monday, 4:00 p.m.–5:30 p.m.
- **CR 309—Scaffold Safety** Tuesday, 10:30 a.m.–Noon
- **CR 312—Chicken/Egg/Chegg! The Merits of Using a Holistic, Integrated Approach for HS&E Attitudinal and Behavioral Improvement** Tuesday, 2:00 p.m.–3:30 p.m.

- **CR 313—Behavior Engineering: Design Your Workplace to Promote Safe Behaviors** Tuesday, 4:00 p.m.–5:30 p.m.
- **CR 314—Virtual Safety Audit** Tuesday, 4:00 p.m.–5:30 p.m.
- **CR 315—Improving Incident Investigation Effectiveness Through Computerized Methods** Wednesday, 10:00 a.m.–11:30 a.m.
- **CR 317—Leadership for Health, Safety, and Environmental Excellence With or Without Authority!** Wednesday, 10:00 a.m.–11:30 a.m.
- **CR 318—PSM for Client In-Plant Explosion** Wednesday, 10:00 a.m.–11:30 a.m.
- **CR 319—Brain Dominance: The Missing Link in Occupational Safety** Wednesday, 10:00 a.m.–11:30 a.m.
- **CR 320—Developing an Effective Contractor Safety Program** Wednesday, 1:00 p.m.–2:30 p.m.
- **CR 321—Safety Measurement: When is Safe, Safe Enough?** Wednesday, 1:00 p.m.–2:30 p.m.
- **CR 322—The “Visually Instructive Plant:” Reduce Accidents and Increase Productivity Through an Organized Facility Marking Program** Wednesday, 3:00 p.m.–4:30 p.m.
- **CR 323—Management of Change: Strategies to Address SH&E as Well as Personal Performance During Times of Change** Wednesday, 3:00 p.m.–4:30 p.m.
- **CR 325—Partner With Your Contractor!** Thursday, 8:00 a.m.–9:30 a.m.
- **CR 328—Using Information Systems to Align Organizational Functioning** Thursday, 10:00 a.m.–11:30 a.m.
- **CR 329—An Overview of Flame-Resistant Clothing** Thursday, 10:00 a.m.–11:30 a.m.
- **CR 330—Making Your Safety and Health Program Work Through the Use of an Innovative Job Safety Analysis Accountability Process** Thursday, 1:00 p.m.–2:30 p.m.
- **CR 331—Motivating Management Commitment: The Performance Measure Approach** Thursday, 1:00 p.m.–2:30 p.m.
- **CR 333—Reducing Human Error With Better Work Instructions** Thursday, 3:00 p.m.–4:30 p.m.

Sampling and Lab Analysis

- **PO 103—Sampling and Laboratory Analysis and Successfully Achieving AIHA Laboratory Accreditation** Monday, 2:00 p.m.–4:20 p.m.



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附件二

Professional Development Courses by Topic

- PDCs may be listed under more than one topic.
- Fees are listed as AIHA and ACGIH member/nonmember.
- Some PDCs request laptop computers. Students should be prepared to bring fully charged personal computers; AIHce does not supply this equipment.



-  Indicates the top ten PDCs at AIHce 2002 selected by registrants.

Topics				
Biological Monitoring	Emergency Response Planning	General Industrial Hygiene Practice	Mold	Protective Clothing and Equipment
Biosafety	Emerging Issues	Indoor Environmental Quality	Noise	Regulatory Issues
Communication and Training Methods	Engineering	International Affairs	Nonionizing Radiation	Respiratory Protection
Computer Applications	Environmental	Ionizing Radiation	Occupational Epidemiology	Risk Assessment
Confined Spaces	Ergonomics	Lab Health and Safety	Occupational Health Standards	Safety
Construction	Exposure Assessment Strategies	Law	Occupational Medicine	Sampling and Lab Analysis
Consulting	Gas and Vapor Detection	Management	Product Stewardship	Toxicology

Biological Monitoring



- **123, NEW!** Recognition, Evaluation and Control of Dermal Exposures in the Workplace, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **409, SOLD OUT** — Microorganisms in Indoor Air: Health Complaints, Sampling Strategies, and Interpretation, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **502, Biological Monitoring for the Detection and Quantification of Chemical Exposure, CANCELED**

- **608, NEW! Case Studies Workshop in Biological Monitoring, CANCELED**

Biosafety

- **106, SOLD OUT — NEW! Microbiology in the Real Industrial Hygiene World**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **409, SOLD OUT — Microorganisms in Indoor Air: Health Complaints, Sampling Strategies, and Interpretation**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **416, Fundamentals of Biosafety**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **701, Prevention, Determination, and Remediation of Biological Contamination in Indoor Environments**, Saturday & Sunday, 8:00 a.m. - 5:00 p.m., \$600/\$750, 2.0 CM Points/1.6 CEUs

Communication and Training Methods

- **108, Effective Management Communications**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **114, NEW! Distance Learning Formats -- Making an Informed Decision for your IH and Safety Training, CANCELED**
- **402, NEW! "If I'm Teaching, Why Aren't They Learning? How to Provide World-Class Training That Works!"**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **404, Advanced Course on Behavior-Based Safety**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **405,  Reducing Community and Employee Outrage: Risk Communication in Controversy**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **410, Emergency Response Planning for the IH**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **422, IH Writing & Speaking: Concise as News, Precise as Law**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **426,  SOLD OUT — Leadership, Communication and Management Skills for the HSE Professional**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **609, NEW! Industrial Hygiene Metrics**, Sunday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU

Computer Applications

- **114, NEW! Distance Learning Formats -- Making an Informed Decision for your IH and Safety Training, CANCELED**
- **303, NEW! Application of Microsoft® Excel to Industrial Hygiene and Laboratory Analysis**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **304, On-Line Toxic Information Sources: Coverage, Maneuverability and Features**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **414, Data Logging Equipment for Evaluating, Controlling and Documenting Workplace Exposures, CANCELED**

Confined Spaces

- **113, Hazard Assessment and Management for Confined Spaces, CANCELED**
- **117, NEW! Welding Health and Safety, and Ventilation for Welding and Hot Work in Confined Spaces**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **415, NEW! Confined Space Issues: After the Entry**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **430, Portable Ventilation Systems and Their Practical Applications**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU

Construction


- **111, SOLD OUT — NEW! Designing Mold Remediation Work Plans**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **124, Construction Safety for Industrial Hygienists**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **403, Construction Safety II**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU

Consulting

- **103, Auditing Health and Safety Management Systems**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **106, SOLD OUT — NEW! Microbiology in the Real Industrial Hygiene World**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **302, NEW! Contracting for Industrial Hygienists**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **402, NEW! "If I'm Teaching, Why Aren't They Learning? How to Provide World-Class Training That Works!"**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **406, Professional Liability in Industrial Hygiene Consulting**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **417, Fundamentals of Industrial Hygiene Law and the Business of Providing Expert Testimony**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **422, IH Writing & Speaking: Concise as News, Precise as Law**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **431, NEW! Mold: Health, Science and Law**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU

Emergency Response Planning


- **121, NEW! Emergency Response Planning for Businesses**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **410, Emergency Response Planning for the IH**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **415, NEW! Confined Space Issues: After the Entry**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU

- **423, NEW! Hazard, Vulnerability and Security Analysis Techniques**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **602, Emergency Reporting and Community Right To Know under SARA/EPCRA**, Sunday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **706,  The Incident Command System and the Role of the Safety Officer during Incident Response Operations**, Saturday & Sunday, 8:00 a.m. - 5:00 p.m., \$600/\$750, 2.0 CM Points/1.6 CEUs

Emerging Issues

- **104, NEW! Preparing for Globally Harmonized Hazard Communication**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **126, Beryllium - Current Occupational Health Strategy**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **306, How to Establish an International IH Program**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **414, Data Logging Equipment for Evaluating, Controlling and Documenting Workplace Exposures**, CANCELED
- **424, SOLD OUT — NEW! Introduction to Chemical/Biological/Radiological Warfare and Consequence Management**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **501, Stress, The Hidden Enemy of Safety, Health, & Environmental Improvement**, Sunday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **505, NEW! Beryllium Research Review**, Sunday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **705, Direct Reading Detection Technology for Chemical, Biological and Radiological Agents**, Saturday & Sunday, 8:00 a.m. - 5:00 p.m., \$600/\$750, 2.0 CM Points/1.6 CEUs

Engineering

- **107, NEW! And They All Fell Down**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **109, Considerations for an Effective Building Decommissioning**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **111, SOLD OUT — NEW! Designing Mold Remediation Work Plans**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **117, NEW! Welding Health and Safety, and Ventilation for Welding and Hot Work in Confined Spaces**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **201, NEW! Behavior Engineering - Design Your Workplace To Promote Safe Behaviors**, Saturday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **418,  SOLD OUT — Noise Control Engineering**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **605, NEW! The Role of Risk Management in Safety Program Costs**, Sunday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU

- **703, Electrical Safety Management & Engineering**, Saturday & Sunday, 8:00 a.m. - 5:00 p.m., \$600/\$750, 2.0 CM Points/1.6 CEUs

Environmental



- **101, An Introduction to Stationary Source (Stack) Emissions Measurement**, CANCELED
- **109, Considerations for an Effective Building Decommissioning**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **120, NEW! Community Noise**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **305, NEW! Introduction to Ionizing Radiation for Industrial Hygienists**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **408, Environmental Law**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **413, Hazardous Waste: Where, Why, and What Do I Do?**, CANCELED
- **421, NEW! Identification, Control and Regulation of TENORM (Technologically Enhanced Naturally Occurring Radioactive Materials)**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **602, Emergency Reporting and Community Right To Know under SARA/EPCRA**, Sunday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU

Ergonomics

- **102, Applied Ergonomics**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **122, Ergonomics: A Practical Approach**, CANCELED
- **201, NEW! Behavior Engineering - Design Your Workplace To Promote Safe Behaviors**, Saturday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **420, Heat Stress and Human Heat Strain**, CANCELED
- **425, NEW! Medical Management of Work-Related Musculoskeletal Disorders**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **504, NEW! Assessment of Exposure to Vibration**, Sunday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **507, Effective Office Ergonomics Programs**, CANCELED

Exposure Assessment Strategies

- **105, NEW! Reconstructing Exposure and Dose: Utility for the Practicing Industrial Hygienist**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **115, Introduction to Non Ionizing Radiation**, CANCELED
- **119, NEW! Advanced Topics in the Application of the AIHA Exposure Assessment Model**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **123, NEW! Recognition, Evaluation and Control of Dermal Exposures in the Workplace**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU

- **127, NEW! Applied Occupational Epidemiology for the Industrial Hygienist**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **205,  Noise Exposure Assessment: Sampling Strategy and Data Acquisition**, Saturday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **301, NEW! Selecting the Most Effective Air Sampling Method for a Project with Emphasis on Diffusive Sampling**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **401, Adjustment of TLVs to Accommodate Specific Conditions in the Workplace**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **502, Biological Monitoring for the Detection and Quantification of Chemical Exposure**, CANCELED
- **504, NEW! Assessment of Exposure to Vibration**, Sunday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **604, NEW! Responding to the HPV Challenge through Industrial Hygiene Practice**, CANCELED
- **607, NEW! Appropriate IH Data Collection for Future Occupational Epidemiology Studies**, Sunday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **702,  Mathematical Models for Assessing Exposure to Indoor Air Contaminants**, Saturday & Sunday, 8:00 a.m. - 5:00 p.m., \$600/\$750, 2.0 CM Points/1.6 CEUs
- **704, Exposure Assessment Strategies and Statistics**, Saturday & Sunday, 8:00 a.m. - 5:00 p.m., \$600/\$750, 2.0 CM Points/1.6 CEUs

Gas and Vapor Detection

- **101, An Introduction to Stationary Source (Stack) Emissions Measurement**, CANCELED
- **301, NEW! Selecting the Most Effective Air Sampling Method for a Project with Emphasis on Diffusive Sampling**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **407, Hands-On Introduction to Gas Analyses with Fourier Transform Infrared (FTIR) Spectrometry**, CANCELED
- **412, Validation of Industrial Hygiene Air Sampling and Analysis Methods**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **705, NEW! Direct Reading Detection Technology for Chemical, Biological and Radiological Agents**, Saturday & Sunday, 8:00 a.m. - 5:00 p.m., \$600/\$750, 2.0 CM Points/1.6 CEUs

General Industrial Hygiene Practice

- **117, NEW! Welding Health and Safety, and Ventilation for Welding and Hot Work in Confined Spaces**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **304, On-Line Toxic Information Sources: Coverage, Maneuverability and Features**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **414, Data Logging Equipment for Evaluating, Controlling and Documenting Workplace Exposures**, CANCELED
- **420, Heat Stress and Human Heat Strain**, CANCELED

- **504, Assessment of Exposure to Vibration**, Sunday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU

Indoor Environmental Quality

- **106, SOLD OUT — NEW! Microbiology in the Real Industrial Hygiene World**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **109, Considerations for an Effective Building Decommissioning**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **111, SOLD OUT — NEW! Designing Mold Remediation Work Plans**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **409, SOLD OUT — Microorganisms in Indoor Air: Health Complaints, Sampling Strategies, and Interpretation**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **419, SOLD OUT — What Industrial Hygienists Need to Know About Building & Construction to Identify and Resolve IEQ Problems**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **431, Mold: Health, Science and Law**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **701, Prevention, Determination, and Remediation of Biological Contamination in Indoor Environments**, Saturday & Sunday, 8:00 a.m. - 5:00 p.m., \$600/\$750, 2.0 CM Points/1.6 CEUs

International Affairs

- **104, NEW! Preparing for Globally Harmonized Hazard Communication**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **306, How to Establish an International IH Program**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU

Ionizing Radiation

- **110, NEW! Principles of Radiation Risk Assessment**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **305, NEW! Introduction to Ionizing Radiation for Industrial Hygienists**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **421, Identification, Control and Regulation of TENORM (Technologically Enhanced Naturally Occurring Radioactive Materials)**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU


Lab Health and Safety


- **112, Safety, Health and Environmental Issues in Research Laboratories**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **429, NEW! Programming and Planning a Safe and Secure State-of-the-Art Laboratory Facility**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU

Law

- **125, NEW! Workers Compensation Insurance: The Law, its Purpose and the Role of the IH**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **302, NEW! Contracting for Industrial Hygienists**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **406, Professional Liability in Industrial Hygiene Consulting**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **408, Environmental Law**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **413, Hazardous Waste: Where, Why, and What Do I Do?**, CANCELED
- **417, Fundamentals of Industrial Hygiene Law and the Business of Providing Expert Testimony**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **431, NEW! Mold: Health, Science and Law**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU

Management




- **103, Auditing Health and Safety Management Systems**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **108, Effective Management Communications**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **125, NEW! Workers Compensation Insurance: The Law, its Purpose and the Role of the IH**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **306, How to Establish an International IH Program**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **404, Advanced Course on Behavior-Based Safety**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **406, Professional Liability in Industrial Hygiene Consulting**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **426,  SOLD OUT — Leadership, Communication and Management Skills for the HSE Professional**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **428, Leadership Principles for Occupational Health & Safety Professionals**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **501, NEW! Stress, The Hidden Enemy of Safety, Health, & Environmental Improvement**, Sunday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **507, Effective Office Ergonomics Programs**, CANCELED
- **508, Product Safety Management Systems**, Sunday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **602, Emergency Reporting and Community Right To Know under SARA/EPCRA**, Sunday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **605, NEW! The Role of Risk Management in Safety Program Costs**, Sunday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **609, NEW! Industrial Hygiene Metrics**, Sunday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU

- **706,  The Incident Command System and the Role of the Safety Officer during Incident Response Operations**, Saturday & Sunday, 8:00 a.m. - 5:00 p.m., \$600/\$750, 2.0 CM Points/1.6 CEUs

Mold

- **106, SOLD OUT — NEW! Microbiology in the Real Industrial Hygiene World**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **111, SOLD OUT — NEW! Designing Mold Remediation Work Plans**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **409, SOLD OUT — Microorganisms in Indoor Air: Health Complaints, Sampling Strategies, and Interpretation**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **419, SOLD OUT — What Industrial Hygienists Need to Know About Building & Construction to Identify and Resolve IEQ Problems**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **431, NEW! Mold: Health, Science and Law**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **701, Prevention, Determination, and Remediation of Biological Contamination in Indoor Environments**, Saturday & Sunday, 8:00 a.m. - 5:00 p.m., \$600/\$750, 2.0 CM Points/1.6 CEUs

Noise

- **120, NEW! Community Noise**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **205,  Noise Exposure Assessment: Sampling Strategy and Data Acquisition**, Saturday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **418,  SOLD OUT — Noise Control Engineering**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **504, NEW! Assessment of Exposure to Vibration**, Sunday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **603,  New Developments in Hearing Protection, Including a Hands-On Fitting Practicum**, Sunday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU

Nonionizing Radiation

- **115, Introduction to Nonionizing Radiation, CANCELED**
- **506, Microwave and Radiofrequency Radiation Primer**, Sunday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **509, NEW! Laser Safety: An Overview, CANCELED**

Occupational Epidemiology

- **127, NEW! Applied Occupational Epidemiology for the Industrial Hygienist**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **505, NEW! Beryllium Research Review**, Sunday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **607, NEW! Appropriate IH Data Collection for Future Occupational Epidemiology Studies**, Sunday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU

Occupational Health Standards

- **401, Adjustment of TLVs to Accommodate Specific Conditions in the Workplace**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **411, Establishing, Interpreting and Applying Occupational Exposure Limits: Current Practices and Future Directions**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU


Occupational Medicine

- **116, Introductory Occupational Toxicology**, CANCELED

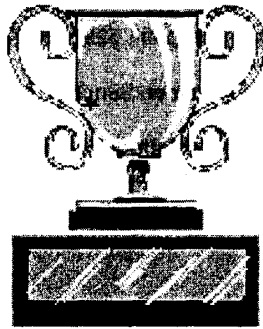
Product Stewardship

- **126, Beryllium - Current Occupational Health Strategy**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **505, NEW! Beryllium Research Review**, Sunday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **508, Product Safety Management Systems**, Sunday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU

Protective Clothing and Equipment

- **204, NEW! Fundamentals of Chemical Protective Clothing: Protection Levels, Chemical Resistance Information and Human Factors**, Saturday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **603,  New Developments in Hearing Protection, Including a Hands-On Fitting Practicum**, Sunday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **606, Risk Assessment-Based Selection and Management of Biological and Chemical Protective Clothing**, CANCELED

Regulatory Issues



- **427, Isocyanates: Current Issues in Toxicology, Occupational Medicine, Industrial Hygiene and Regulation**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU

Respiratory Protection


- **503, SOLD OUT — Development of Respirator Cartridge Change Schedules**, Sunday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU

Risk Assessment


- **102, Applied Ergonomics**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **105, NEW! Reconstructing Exposure and Dose: Utility for the Practicing Industrial Hygienist**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **110, NEW! Principles of Radiation Risk Assessment**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **121, NEW! Emergency Response Planning for Businesses**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **411, Establishing, Interpreting and Applying Occupational Exposure Limits: Current Practices and Future Directions**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **423, NEW! Hazard, Vulnerability and Security Analysis Techniques**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **601, Introduction to Risk Assessment for the Industrial Hygienist**, Sunday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **604, NEW! Responding to the HPV Challenge through Industrial Hygiene Practice**, CANCELED
- **605, NEW! The Role of Risk Management in Safety Program Costs**, Sunday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU

Safety

- **107, NEW! And They All Fell Down**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **113, Hazard Assessment and Management for Confined Spaces**, CANCELED

- **118,  Machine Safeguarding 101**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **124, Construction Safety for Industrial Hygienists**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **201, NEW! Behavior Engineering - Design Your Workplace To Promote Safe Behaviors**, Saturday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **203, Lockout of Hazardous Energy for IH Professionals, CANCELED**
- **403, NEW! Construction Safety II**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **404, Advanced Course on Behavior-Based Safety**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **428, Leadership Principles for Occupational Health & Safety Professionals**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **430, Portable Ventilation Systems and Their Practical Applications**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **501, NEW! Stress, The Hidden Enemy of Safety, Health, & Environmental Improvement**, Sunday, 8:00 a.m. - Noon, \$150/\$185, 0.5 CM Point/0.4 CEU
- **605, NEW! The Role of Risk Management in Safety Program Costs**, Sunday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **703, Electrical Safety Management & Engineering**, Saturday & Sunday, 8:00 a.m. - 5:00 p.m., \$600/\$750, 2.0 CM Points/1.6 CEUs

Sampling and Lab Analysis

- **101, An Introduction to Stationary Source (Stack) Emissions Measurement, CANCELED**
- **301, NEW! Selecting the Most Effective Air Sampling Method for a Project with Emphasis on Diffusive Sampling**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **303, NEW! Application of Microsoft® Excel to Industrial Hygiene and Laboratory Analysis**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **407, Hands-On Introduction to Gas Analyses with Fourier Transform Infrared (FTIR) Spectrometry, CANCELED**
- **412, Validation of Industrial Hygiene Air Sampling and Analysis Methods**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **427,  Isocyanates: Current Issues in Toxicology, Occupational Medicine, Industrial Hygiene and Regulation**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU

Toxicology

- **116, Introductory Occupational Toxicology, CANCELED**
- **123, NEW! Recognition, Evaluation and Control of Dermal Exposures in the Workplace**, Saturday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU

- **304, On-Line Toxic Information Sources: Coverage, Maneuverability and Features**, Saturday, 1:00 p.m. - 5:00 p.m., \$150/\$185, 0.5 CM Point/0.4 CEU
- **424, SOLD OUT — NEW! Introduction to Chemical/Biological/Radiological Warfare and Consequence Management**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU
- **427, Isocyanates: Current Issues in Toxicology, Occupational Medicine, Industrial Hygiene and Regulation**, Sunday, 8:00 a.m. - 5:00 p.m., \$295/\$375, 1.0 CM Point/0.8 CEU

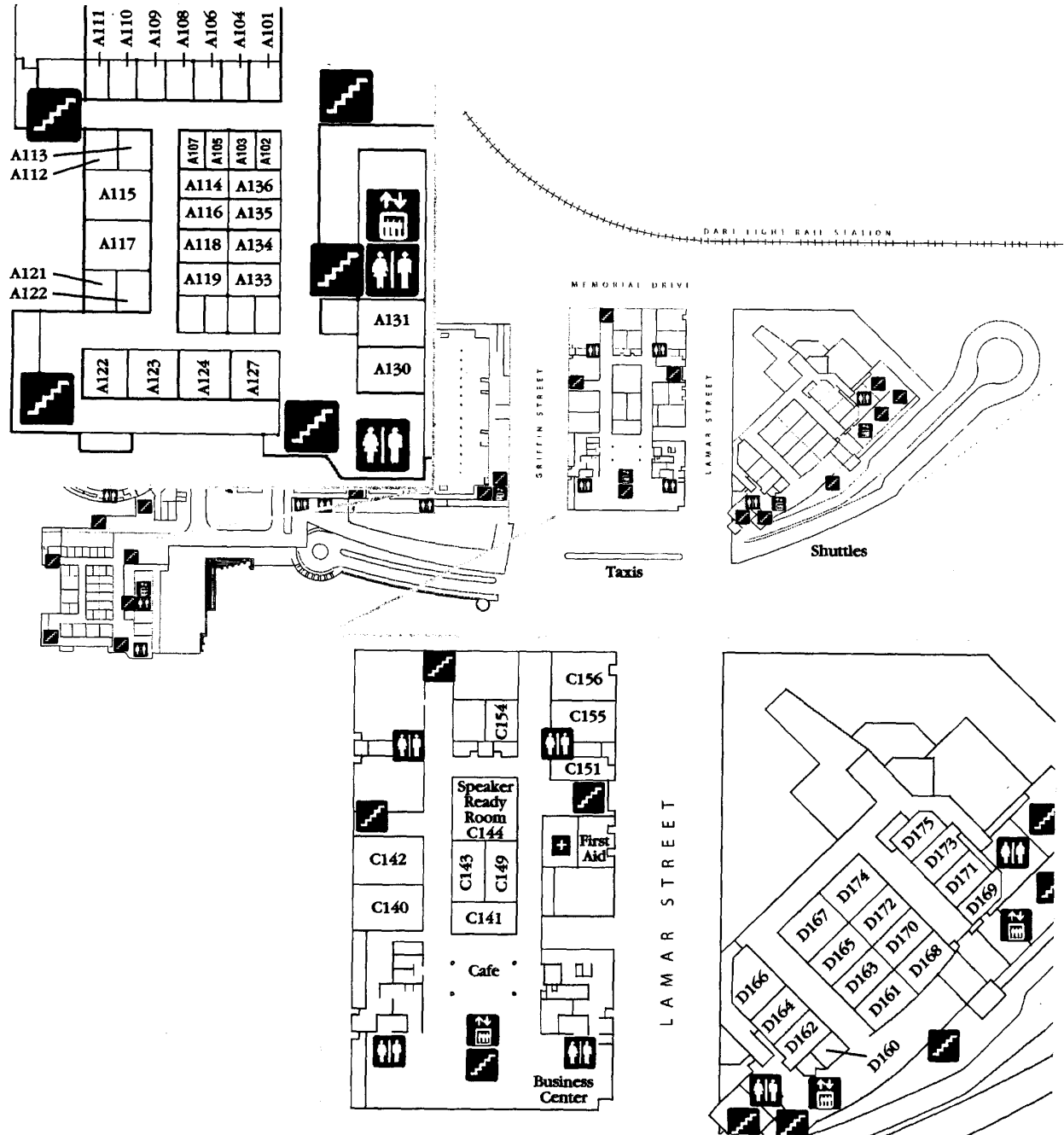


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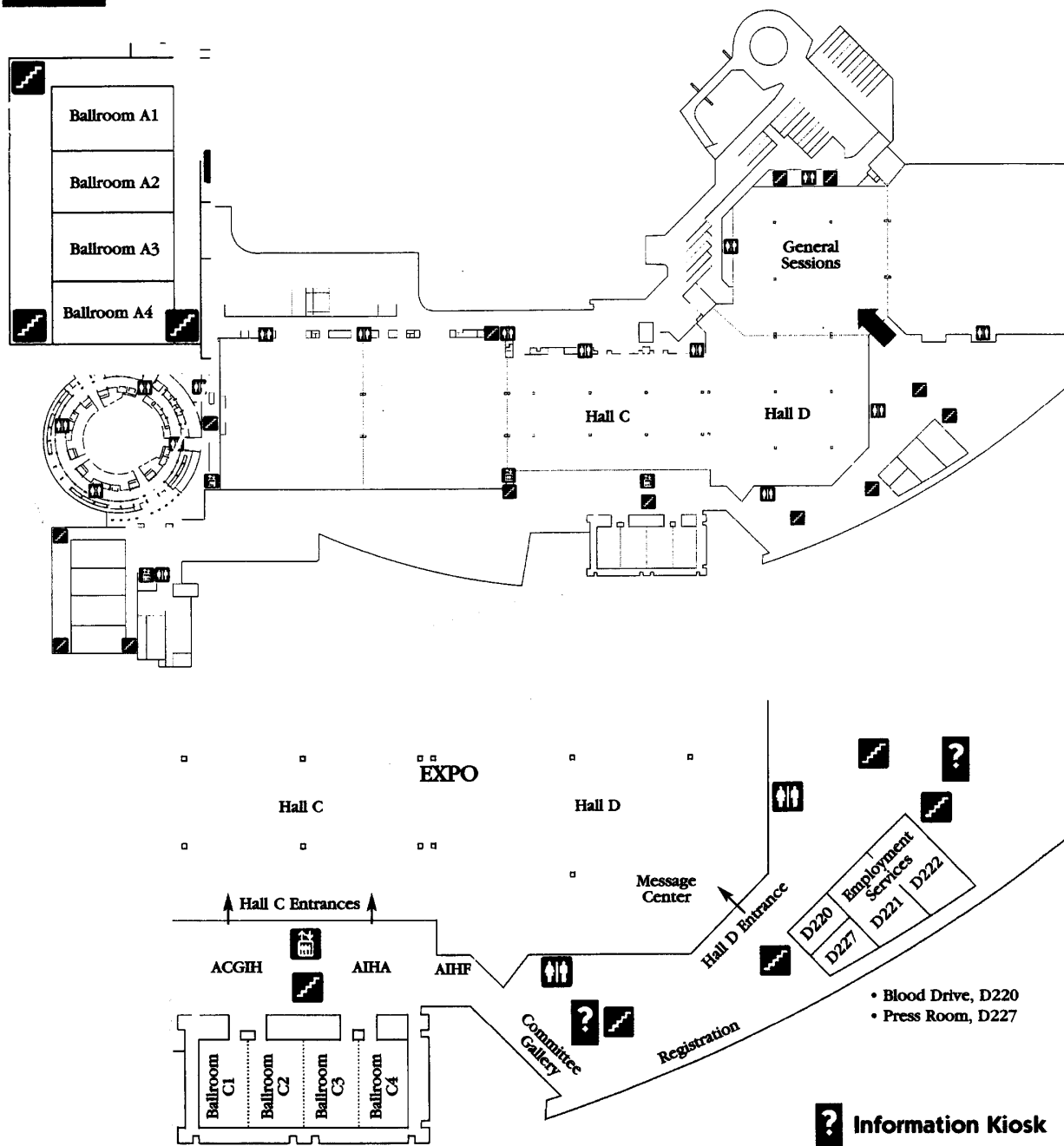
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Dallas Convention Center

Floor Plans



Level 1, Ground



Level 2, Registration and Exhibits

Dallas Convention Center

Floor Plans

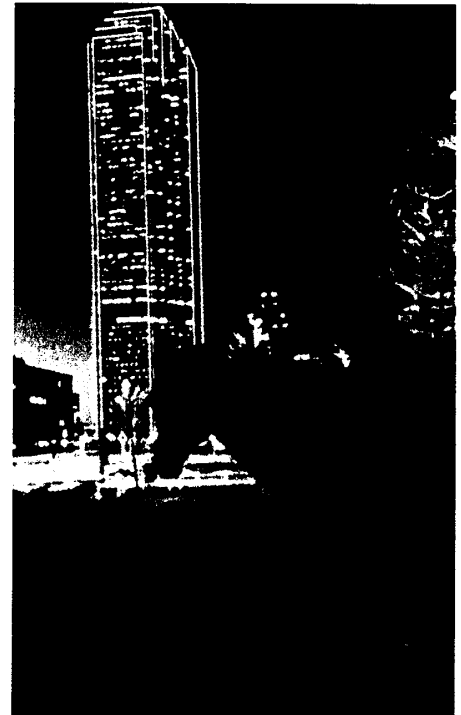
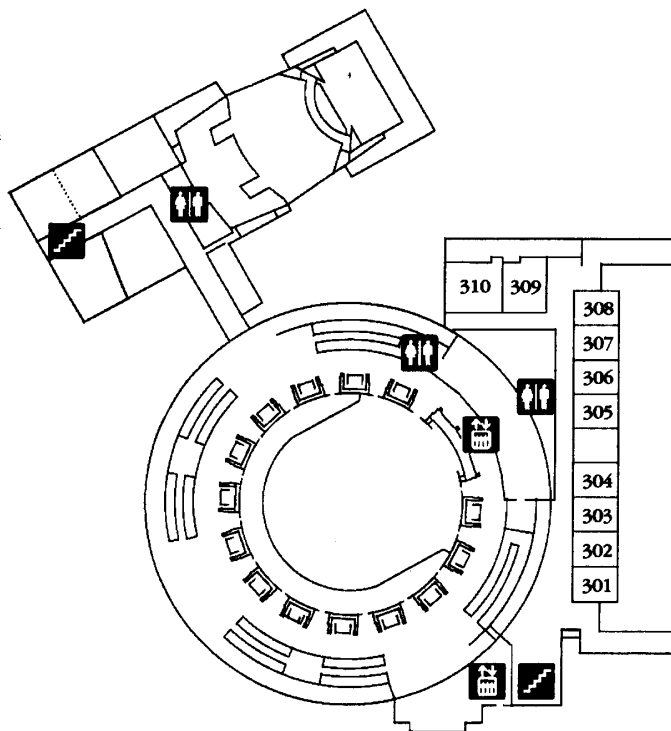
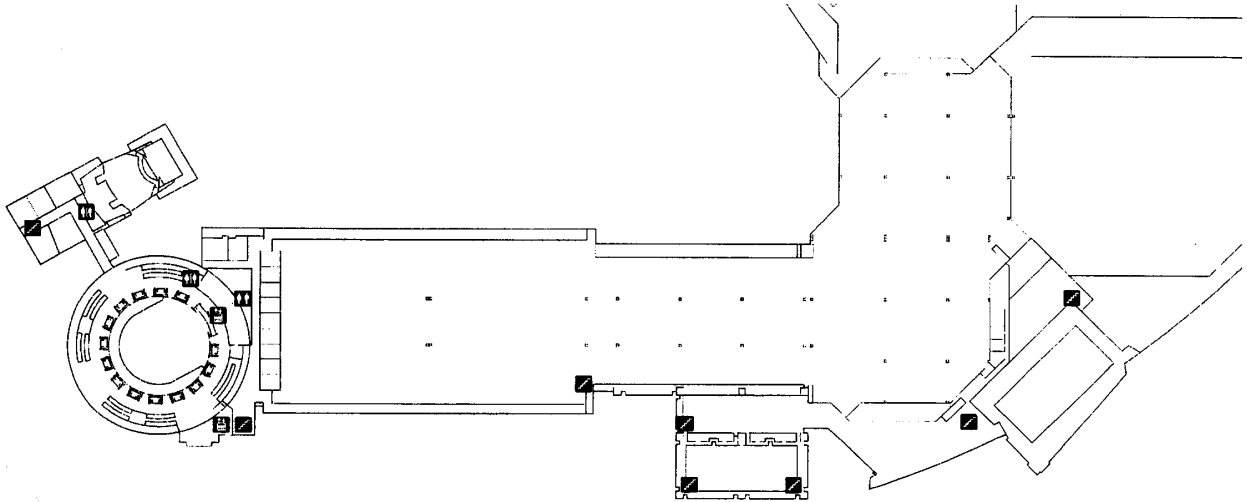


Photo courtesy of DCVB.

Level 3, Mezzanine