



Melanie D. Nembhard, MSPH, CIH

Current Position

Senior Health Scientist

Discipline Areas

- > Industrial Hygiene
- > Exposure Assessment
- > Human Health Risk Assessment

Years' Experience

6 Years

Joined Cardno

August 2014

Education

- > MSPH, Occupational and Environmental Hygiene, Johns Hopkins Bloomberg School of Public Health, 2014
- > BS, Biology, University of Georgia, 2012

Summary of Experience

Ms. Melanie D. Nembhard is a board certified industrial hygienist with six years of professional experience in industrial hygiene, exposure assessment and human health risk assessment. She is currently a Senior Health Scientist with Cardno ChemRisk in the San Francisco, CA office. She earned her Master of Science in Public Health (MSPH) in Occupational and Environmental Hygiene from the Johns Hopkins Bloomberg School of Public Health. She also holds two certificates from Johns Hopkins, the Risk Sciences and Public Policy Certificate and the Population and Health Certificate. Ms. Nembhard has been involved in researching and evaluating exposures, as well as assessing risk to workers, consumers, and communities exposed to a variety of chemical hazards, physical hazards, and biological hazards, such as asbestos, benzene, butadiene, diacetyl, silica, welding, perchloroethylene (PCE), polychlorinated biphenyls (PCBs), various inhalation irritants, dermal irritants, noise, heat stress, and mold. Additionally, she has participated in baseline exposure assessments and turnaround exposure assessments at multiple oil refineries regarding occupational and environmental exposures to various chemical and physical agents, including particulates, nickel carbonyl, welding fume, volatile organic compounds, and noise.

Significant Projects

Industrial Hygiene

Assisted in preparing re-opening guidelines associated with the AIHA COVID-19 Re-Open America Guidelines Task Force.

Designed and implemented a simulation study to characterize exposures to metals, VOCs, and inorganic acids from lithium-ion battery thermal runaway events for purposes of performing a screening level human health risk assessment.

Evaluated offgassing chemicals from film adhesive products for odor thresholds, occupational exposure limits, and toxicological endpoints to determine potential exposures that may occur to workers or consumers.

Performed a baseline exposure assessment at an automotive manufacturing facility. Performed a qualitative assessment of chemical stressors for certain departments throughout the facility, and a qualitative ranking of risk by job task. The qualitative assessment included review of processes and included interviews with representatives from each department and job title to assess exposure duration and frequency of routine operations and specific work tasks.

Assisted with creation and execution of a simulation study to characterize potential exposure to terpenes, VOCs, and particles associated with airborne dispersion of tea tree essential oil utilizing two essential oil diffuser types in a household setting.

Performed personal and area air sampling for various chemicals, including formaldehyde, total hydrocarbons, 2-butoxyethanol, n-butanol, 1,2,4-trimethylbenzene, and diisobutyl ketone, during painting of automobile parts at an automotive manufacturing facility.

Participated in baseline exposure assessments at multiple crude oil refineries. Assessments included full-shift and/or short-term sampling for volatile organic compounds, welding, particulates, and noise. Collected qualitative information from various types of employees to assign similar exposure groups and inform future sampling efforts.

Assisted with evaluation and revision of a medical surveillance standard for an oil and gas company. Reviewed and updated policies for general medical surveillance, specific chemical medical surveillance, and fitness for duty for specific refinery groups and emergency response personnel.

Participated in a simulation study during which recreations of historical asbestos work with and take-home scenarios associated with asbestos-containing cement pipe were performed and sampled.

Served as a contract industrial hygienist at three oil refineries during multi-unit turnarounds. Performed extensive personal air monitoring for welding fumes, hexavalent chromium, asbestos, and nickel carbonyl. In addition, made PPE recommendations, evaluated worker respiratory protection use, performed heat stress assessments associated with work in a confined space, and investigated skin irritation claims.

Litigation Support

Managed litigation project regarding claims of exposure to polychlorinated biphenyls (PCBs). Work included a comprehensive literature review of health endpoints, and creation of a large industrial hygiene database to inform potential exposure.

Managed litigation support on cases related to inhalation irritants, silica exposure, and asbestos exposure from laboratory equipment, industrial equipment and insulation and ambient air on merchant ships. Reviewed, interpreted and summarized relevant scientific literature, case-specific materials, corporate documents, and sampling data for use in the preparation of expert testimony and reports.

Provided litigation support for dermal exposure to sunscreen. Work included an extensive literature review on sunscreen use and an exposure assessment for various individuals.

Provided litigation support for a case involving benzene and butadiene. Reviewed and summarized testimony and corporate documents relating to industrial hygiene programs. Developed a narrative regarding occupational exposure limits over time for benzene and butadiene. Created databases to streamline the review of years of sampling for each substance and to analyze the data.

Provided litigation support for cases involving occupational diacetyl exposure from working with food flavorings. Reviewed and summarized testimony, corporate policies, and data regarding respiratory issues reportedly related to chemicals in the food flavorings. Created databases for the different chemicals reported on food flavor formula sheets and their respective NFPA health ratings.

Provided litigation support for a case involving the regulatory expectations and industry practice of multi-employer worksites as they relate to the safety and health of contractors.

Provided litigation support for welding exposure on ships and in shipyards. Reviewed welding literature and case materials for use in the preparation of expert testimony and reports.

Certifications

- > Certified Industrial Hygienist (CIH), Comprehensive Practice (CP# 11542), American Board of Industrial Hygiene (ABIH), 2018
- > Safe Management of Productions, First Option Safety, 2020
- > COVID-19: General Prevention, Georgia Film Academy, 2020
- > OSHA 30-hour General Industry, Summit Training Source, Inc., 2020

Membership to Professional Societies

- > American Industrial Hygiene Association (AIHA) (2014-Current)
 - > COVID-19 Re-Open America Guidelines Task Force, 2020 – Present
 - > AIHA Mentoring and Professional Development Committee, 2017 – Present
 - > Chair, Present
 - > AIHA Students and Early Career Professionals Committee, 2014 – Present
 - > AIHA Northern California Section, 2015 – Present

Peer-Reviewed Publications

- > Benson, S.M., J.R. Maskrey, M.D. Nembhard, K.M. Unice, M.A. Shirley, and J.M. Panko. 2019. Evaluation of personal exposure to surgical smoke generated from electrocautery instruments: A pilot study. *Ann Work Exp Health*. 63(9):990-1003.
- > Abelmann, A., J.R. Maskrey, J.T. Lotter, A.M. Chapman, M.D. Nembhard, J.S. Pierce, J.M. Wilmoth, R.J. Lee, and D.J. Paustenbach. 2017. Evaluation of take-home exposure to asbestos from handling asbestos-contaminated worker clothing following the abrasive sawing of cement pipe. *Inhal Tox*. 29(12-14):555-566.
- > Perez, A., M. Nembhard, A. Monnot, D. Bator, E. Madonick, and S.H. Gaffney. 2017. Child and adult exposure and health risk evaluation following the use of metal- and metalloid-containing costume cosmetics sold in the United States. *Reg Tox Pharm*. 84:54-63.
- > Perez, A.L., M. Nembhard, A. Monnot, D. Bator, E. Madonick, and S.H. Gaffney. 2017. Supplementary dataset for child and adult exposure and health risk evaluation following the use of metal- and metalloid-containing costume cosmetics sold in the United States. *Data in Brief*. 13:129-131.

White Papers

- > Lynch, H., A. Buerger, M. Nembhard, and L. Hallett. 2020. Summer Camps and Campgrounds: COVID-19 Mitigation Strategies. *Cardno ChemRisk*.

Published Abstracts

- > Nembhard, M.D., A.R. McEwen, J.L. Dent, D.M. Hollins, and C.A. Barlow. 2018. Near-Source Community Exposure to Asbestos: A Review. Abstract #571. Poster Presentation at the American Industrial Hygiene Conference & Exposition (AIHce), May 20-23 2018, Philadelphia, PA
- > Lotter, J.T., A. Abelmann, J.R. Maskrey, A.M. Chapman, M.D. Nembhard, J.S. Pierce, J.M. Wilmoth, R.J. Lee and D.J. Paustenbach. 2018. Evaluation of Take-Home Exposure to Asbestos from Handling Asbestos-Contaminated Worker Clothing Following the Cutting of Cement Pipe. Abstract #292. American Industrial Hygiene Conference & Exposition (AIHce) May 21-23, 2018, Philadelphia, PA.
- > Maskrey, J.R., A. Abelmann, J.T. Lotter, A.M. Chapman, M.D. Nembhard, J.M. Wilmoth, R.J. Lee and D.J. Paustenbach. 2018. Airborne Chrysotile and Crocidolite Exposure to Workers and Bystanders during Use of a Powered Abrasive Saw to Cut Asbestos-Containing Cement Pipe. Abstract #246. American Industrial Hygiene Conference & Exposition (AIHce) May 21-23, 2018, Philadelphia, PA.
- > Abelmann, A., J.R. Maskrey, J.T. Lotter, A.M. Chapman, M.D. Nembhard, S.F. Schlaegle, B.R. Bandli, R.J. Lee and D.J. Paustenbach. 2018. Asbestos Fiber Transport from Facilities into the Community: Results of Field Studies. Abstract #198. American Industrial Hygiene Conference & Exposition (AIHce) May 21-23, 2018, Philadelphia, PA.
- > Nembhard, M., R. Novick, M. McKeown, D.J. Paustenbach and K.M. Unice. 2017. An Evaluation of 1,3-butadiene and benzene in a Texas chemical plant (1992-2012). Abstract #765. Poster Presentation at American Industrial Hygiene Conference & Exposition (AIHce), June 4-7, 2017, Seattle, WA.
- > Hollins, D.M., P. Scott, J. Bare, M. Nembhard, D. Paustenbach. 2017. Estimating ambient asbestos emissions and resulting airborne concentrations in the surrounding community exposure from former industrial facilities: a review. Abstract #3248. Poster Presentation at the 56th Annual Society of Toxicology (SOT) Meeting, Baltimore, Maryland, March 12-16, 2017.