ROUX

PROFESSIONAL PROFILE

Emily Goswami, M.S., CIH
Technical Director

TECHNICAL SPECIALTIES

Ms. Goswami is a certified industrial hygienist with over 20 years of experience. Her career has focused on exposure assessment of chemicals/agents and associated risk of health effects in the environment, workplace, and consumer products. Ms. Goswami's areas of expertise include:

- Environmental and occupational exposure assessment
- Human health risk assessment
- Toxic tort evaluations
- California's Proposition 65 evaluations
- Consumer product stewardship
- Indoor air quality
- Exposure reconstruction
- Expert witness work

EXPERIENCE SUMMARY

Roux Associates, Inc. (July 2022-Present)

Exponent, Inc. (2000-2022)

Entrix, Inc. (2001-2002)

CREDENTIALS

M.S., Environmental Health, University of Washington, 2001

B.A., Environmental Science, University of California at Berkeley, 1998

CERTIFICATIONS AND TRAINING

Certified Industrial Hygienist - Comprehensive Practice, American Board of Industrial Hygiene, since 2009: Credential #9579

PROFESSIONAL AFFILIATIONS

American Industrial Hygiene Association: Member (2005-present)

American Industrial Hygiene Association – Northern California Section: President (2020-2021)

KEY PROJECTS

Product Exposure Evaluations

- **Consumer Product Evaluations, CA:** Evaluated numerous types of products for compliance with California's Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986), other regulations, and litigation purposes. Products included dinnerware, painted containers, toys, jewelry, gambling chips, adhesives, markers, home improvement equipment, shoes and clothing, fragrance devices, beauty products, foods, and dietary supplements. Designed and conducted studies to determine potential exposures via dermal contact, incidental ingestion (including hand-to-mouth contact), direct ingestion, and inhalation. Chemicals included lead, cadmium, benzene, toluene, arsenic, formaldehyde, bisphenol A (BPA), and phthalates. Developed benchmarks for comparison including No Significant Risk Levels and Maximum Allowable Dose Levels.
- **Complex Solvent Exposure Calculator, worldwide**: Developed exposure calculator tool for a consortium of global manufacturers so that each manufacturer can enter their product's specific parameters and determine the theoretical consumer exposure levels to solvents in finished products based on multiple use scenarios which included dermal, inhalation, and ingestion pathways. Each manufacturer was able to quickly determine the margins of safety for their products to determine whether they need to be re-formulated.
- **Mercury Investigation for Product Development, WA**: Designed and conducted occupational exposure investigation of mercury vapors from development of product prototype. Worked quickly to evaluate exposures, identify sources and levels of mercury in numerous product components, work with client to explain potential exposures to workers and the risk levels in a manner that is easy to disseminate to exposed workers.
- **Product Stewardship, nationwide:** Worked with major manufacturer to review toxicity and regulatory data and potential for exposure for numerous chemicals. Provided safety categories to determine which chemicals to replace with safer alternatives.
- **School Products, CA:** Evaluated products for potential lead exposure and advised school on a *pro bono* basis.
- **Warehouse Fire Evaluation, MO:** Designed and conducted sampling plan to evaluate odors in numerous products that were exposed to a warehouse fire. Developed tiered protocol to determine which products and components were fire-affected.

Occupational and Environmental Health Risk Assessment

- **Contaminated Site Human Health Risk Assessments, CA:** Conducted numerous risk assessments for various types of sites including former gold mines, a former barium manufacturing facility, former manufactured gas plants, railroad corridors, and foundries, as well as the first former munitions site in California to be granted DTSC approval for unrestricted residential use. Prepared statistical analyses of metals, explosives, radionuclides, pesticides, polychlorinated biphenyls (PCBs), polyaromatic hydrocarbon (PAHs) concentrations to determine whether soils were affected by site activities. Developed remediation goals protective of future residents, commercial workers, construction workers, recreational site users, and ecological receptors. Also evaluated modeled potential re-suspended dust emissions during remediation activities. Evaluations included ingestion, inhalation (including vapor intrusion), and dermal contact with a variety of chemicals/agents including metals, volatiles, radionuclides, explosives, and more.

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- **Mercury in Schools, WA, PA:** Evaluated potential exposures to mercury from gym mats in two schools on a *pro bono* basis. Identified areas of concern, need for further investigation, and communicated potential risks to school administration and parents.
- **Residential Lead Litigation, CA:** Conducted investigation of residence along with a certified lead assessor to identify potential sources of excessive lead exposure. Provided report with expert opinions.
- **Occupational and Paraoccupational Exposure Litigation, CA:** Retained as expert in toxic tort case involving heavy occupational exposures to lead as well has take-home exposures. Designed and conducted site investigation and produced expert report with opinions on exposure and risk.
- **Safe-Handling Procedures, CA:** Worked directly with major manufacturer to review new chemicals to be used in research and provide guidance on most appropriate handling and safety procedures including personal protective equipment and regulatory requirements.
- **Air Pollution Study, Seattle, WA:** Collected and analyzed air monitoring data from 40 stations to evaluate potential exposures to particulates, nitrogen dioxide, and sulfur dioxide in Seattle as part of an EPA-sponsored study comparing indoor, outdoor, and personal samples. Analyzed data to understand effects of spatial variation on representativeness of central site monitoring. Published results in the Journal of Air and Waste Management.

Asbestos

- **Domestic Asbestos Exposure:** Conducted extensive review of epidemiologic and exposure data related domestic (take-home) routes of asbestos exposure. Provided detailed critique of literature and conducted meta-analysis of epidemiologic literature which resulted in a key publication cited by the World Health Organization.
- **Asbestos Exposure Reconstruction, CA:** Designed and conducted exposure reconstruction study in a test chamber to evaluate potential exposure to asbestos fibers from cutting gaskets.
- **Asbestos Exposure Assessments:** Reviewed hundreds of asbestos litigation matters to evaluate historic exposures to asbestos during various types of occupational tasks to evaluate potential risks.
- **Epidemiologic Review:** Reviewed epidemiology studies of numerous occupations to determine whether certain occupations have an excess risk of asbestos-related disease; Occupations included insulators, plumbers, pipefitters, electricians, railroad workers, farmers, power plant workers, sheet metal workers, steel workers, bricklayers, carpenters, construction laborers, bakers, TV repairmen, gardeners, refinery workers, and longshoremen.

Mold

- **Residential Mold Investigations, CA:** Evaluated numerous residences for signs of moisture intrusion and excessive mold growth. Designed and conducted air sampling studies, analyzed and interpreted air sampling data and mycotoxin levels in the body, and provided opinions on whether excessive mold growth exists and the possible sources.
- **Mold Litigation, CA:** Retained in numerous cases regarding alleged exposure to excessive mold and health effects. Evaluated and critiqued data from various mold investigations and provided expert opinions in the form of written reports.
- **Product Liability Litigation, OH:** Testified as expert in class-action litigation related to mold and odors allegedly associated with consumer products. Conducted extensive laboratory testing and on-site investigation of named plaintiff's home. Validated odor assessment method by comparing analyses of air samples with results of a consumer panel.

PUBLICATIONS

Benson P, Goswami E, McCoy MJ. 2021. The Dose Makes the Poison: Incorporating the Concepts of Exposure and Dose into Your Witness Questioning Strategy. DRI Toxic Torts and Environmental Law, Newsletter. Volume 23, Issue 1.

Goswami E, Craven V, Dahlstrom DL, Alexander D, Mowat F. Domestic asbestos exposure: A review of epidemiologic and exposure data. International Journal of Environmental Research and Public Health 2013; 10(11):5629-5670. http://www.mdpi.com/1660-4601/10/11/5629

Sheehan P, Bogen KT, Hicks J, Goswami E, Brorby G, Lau EC, Ott B. Benzene inhalation by parts washers: New estimates based on measures of occupational exposure to solvent coaromatics. Risk Analysis 2010; 30(8):1249-1267.

Bogen KT, Goswami E. Screening-level hazard assessment for six phthalates under A.B. 1108 and Proposition 65 (Rev. 1). Technical Report prepared by Exponent, Inc., for the Environment Section, Office of the Attorney General, California Department of Justice (CalDOJ), May 2009 (made public by CalDOJ, August 2009), Exponent, Inc., Oakland, CA, 97 pp.

Sheehan P, Malzahn D, Goswami E, Mandel JH. Simulation of benzene exposure during use of a mineral spirit solvent to clean elevator bearing housings. Human and Ecological Risk Assessment 2008; 14:421- 432.

Goswami E, Larson T, Lumley T, Liu L-J. Spatial characteristics of fine particulate matter: Identifying representative monitoring locations in Seattle, Washington. Air and Waste Manage Association 2002; 52:324-333.

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BOOK CHAPTERS

Barrie, MD, Dahlstrom DL, Goswami E, Kaetzel R. The Halogens. Patty's Toxicology 2012; 1033-1108.

PRESENTATIONS

Goswami E. The Chrysotile Defense – Trends and Recent Literature, and Household Exposures, Washington Defense Trial Lawyers Asbestos Law Update, virtually. October 1, 2021.

Goswami E. COVID-19 Knowledge & Resources. Western Energy Institute Construction Conference, virtually, September 23, 2020.

Goswami E and Kalmes R. Evaluation of street-level carbon monoxide levels in the U.S. Poster presentation at the American Industrial Hygiene Conference and Exposition (AIHce), virtually, May 24-26, 2020.

Ellis AM, Swank E, Goswami E. What Every Business Needs to Know About Prop 65. Buchalter webinar. October 15, 2019.

Goswami E, Sheehan P. Evaluation of dermal and inhalation exposures from consumer products. International Society of Exposure Science (ISES) California webinar. May 31, 2019.

Sheehan P, Lowney Y, Kalmes R, Bogen KT, Posson M, Glomski M, Singhal A, Volberg V, Beckerman B, Goswami E. Assessing user exposure to consumer products: methods specific to product use and exposure route to assess consumer health risk. Presented at the 36th Annual Meeting of SETAC North America, Salt Lake City, UT, November 1-5, 2015.

Goswami E, Craven V, Dahlstrom D, Mowat F. Domestic asbestos exposures: A review of epidemiologic and exposure data. American Industrial Hygiene Conference and Exposition (AIHce), Denver, CO, May 22-27, 2010.

Sheehan P, Bogen K, Brorby G, Goswami E. Improved estimates of worker exposure to benzene during parts washing based on a new approach analyzing solvent and air data for other aromatic constituents. Presented at the American Industrial Hygiene Conference and Expo, Denver, CO, May 22-27, 2010.

Sheehan P, Bogen K, Brorby G, Goswami E. Worker inhalation exposure to benzene from solvents during parts washing. Society for Risk Analysis 2009 Annual Meeting, Baltimore, MD, December 6-9, 2009.

Sheehan P, Goswami E, Hicks J, Barrie M. An assessment of historical benzene exposures of printing press operators. Presented at the American Industrial Hygiene Conference and Expo, Minneapolis, MN, May 31-June 5, 2008.

Sheehan P, Hicks J, Goswami E, Lau E, Greene J, Fedoruk MJ. Assessment of mechanics' exposure to benzene in mineral spirit solvents during parts washing activities. Presented at the American Industrial Hygiene Conference and Expo, Chicago, IL, May 13-18, 2006.

Goswami E, Malzahn D, Richter R, Sheehan P. Simulation and modeling techniques to reconstruct historical benzene exposures. Platform presentation at the Society for Risk Analysis Meeting, Baltimore, MD, December 3-6, 2006.

Brorby G, Kalmes R, Goswami E, Mowat F, Sheehan P. Evaluating exposures to consumer products. Platform presentation at the Society for Risk Analysis Meeting, Baltimore, MD, December 3-6, 2006.

Sheehan P, Malzahn D, Goswami E, Kalmes R, Hicks J, Mandel J. Use of a simulation to estimate benzene exposure from degreasing elevator parts. Presented at the Society for Risk Analysis Meeting, Baltimore, MD, December 3-6, 2006.

Goswami E, Greene J, Sheehan P, Hicks J. Analysis of exposure to benzene in mineral spirit solvents during parts washing and degreasing operations. Poster presentation at the Society of Toxicology Meeting, San Diego, CA, March 5-9, 2006.

Goswami E, Kalmes R. Exposure to formaldehyde during use of a nail care product. Poster presentation at the American Industrial Hygiene Association Conference and Exposition, Anaheim, CA, May 21-26, 2005.

Madl AK, Leung HW, Proctor D, Goswami E, Hays S, Cohen E. Derivation of a RfD for perchlorate: Identifying a critical health endpoint and the most sensitive subpopulation. Poster presentation at the Society of Toxicology Annual Meeting, Baltimore, MD, March 21-25, 2004.

APPEARANCES AND EXPERT REPORTS

Willis et al. vs. City of Sacramento. Sacramento County Superior Court. Expert report 2018.

Goldson v. KB Home, et al. District Court of Florida. Expert affidavit in 2018.

Maureen Huffman et al. v. Electrolux North America Inc., et al. U.S. District Court, Northern District of Ohio. Expert report in 2014. Deposition January 6, 2015.

CSAA Insurance Exchange vs. Premier Restoration & Remodel et al. Superior Court of California, County of San Francisco. Deposition October 7 and November 3, 2016; trial testimony November 7, 2016.

Gray vs. Bui et al. Alameda County Superior Court, California. Expert report in 2016.

Williams v. Cardoza et al. Stanislaus County Superior Court, California. Expert report in 2016.

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