



**Exponent**<sup>®</sup>  
Engineering & Scientific Consulting

**Pat Sheehan, Ph.D.**

Principal Scientist | Health Sciences  
Oakland  
+1-510-268-5008 | PSheehan@exponent.com

## Professional Profile

Dr. Sheehan is an ecologist, toxicologist, and risk assessor with more than 30 years of experience conducting human health and ecological risk assessments. He has been recognized as an expert in exposure and risk assessment.

Dr. Sheehan has managed and conducted human health and ecological risk assessments at contaminated sites, industrial and commercial facilities, residences and for consumer products evaluating chemicals in air, surface water, groundwater, soils, soil vapors, and on the hands, packaging and food items. He specialized in assessing and quantifying potential historical, current and future exposures to chemicals in the environment, workplace and home, and associated health risks.

Dr. Sheehan has designed and directed studies to simulate and reconstruct historical exposures in occupational and residential settings to benzene, MTBE, TCE, PCE and other volatile chemicals in solvents, and asbestos in adhesives, roofing products, joint compound and talc, as well as lead, phthalates, formaldehyde and various other chemicals in consumer products. He has prepared and presented product risk assessments under California's Proposition 65 and U.S. Consumer Product Safety Commission regulations. He has also evaluated potential future chemical exposures associated with new facilities, combustion sources and products. He assists companies develop new products with testing and prospective risk assessment including assessment of allergic contact dermatitis risk from chemical allergens released from electronic wearable products.

Dr. Sheehan also has designed and directed wildlife population assessments, aquatic toxicity tests, toxicity identification evaluations, risk allocation evaluations, and probabilistic uncertainty analyses. Dr. Sheehan frequently interacts with local, state, and federal regulatory agencies, and has testified as an expert before government panels and in legal proceedings on toxicology, exposure and human health and wildlife risks from chemical exposures and has communicated risk issues in public, regulatory and legal forums.

## Academic Credentials & Professional Honors

Ph.D., Toxicology/Ecology, University of California, Davis, 1980

M.S., Ecology, University of California, Davis, 1975

B.S., Mechanical Engineering, Santa Clara University, 1968

## Prior Experience

Principal Scientist, McLaren Hart/ChemRisk, 1989-1998

Senior Scientist, Aqua Terra Technologies, 1985-1989

Assistant Professor, Duke University, 1984-1985

Research Scientist, National Research Council Canada, 1981-1984

Postdoctoral Research Associate, New York University, 1980-1981

## Professional Affiliations

American Industrial Hygiene Association

Society of Environmental Toxicology and Chemistry

Society for Risk Analysis

Society of Toxicology

## Publications

Lewis RC, Sheehan PJ, DesAutels CG, Watson HN, Kirman CR. Monitored and modeled ambient air concentrations of ethylene oxide: contextualizing health risk for potentially exposed populations in Georgia. *Int J Environ Res Public Health* 2022; 19, 3364.

Sheehan PJ, Lewis RC, Kirman CR, Watson HN, Winegar ED, Bus JS. Ethylene oxide exposure in populations residing near sterilization and other industrial facilities: context based on endogenous and total equivalent concentration exposures. *Int J Environ Res Public Health* 2021; 18, 607.

Kirman CR, Li AA, Sheehan PJ, Bus JS, Lewis RC, Hays SM. Ethylene oxide review: characterization of total exposure via endogenous and exogenous pathways and their implications to risk assessment and risk management. *J Toxicol Environ Health B Crit Rev* 2021; 24, 1-29.

Bogen KT, Sheehan PJ, Valdez-Flores C, Li AA. Reevaluation of historical exposures to ethylene oxide among U.S. sterilization workers in the National Institute of Occupational Safety and Health (NIOSH) cohort. *Int J Environ Res Public Health* 2019; 16, 1738.

Sheehan P, Singhal A, Bogen KT, MacIntosh D, Kalmes R, McCarthy J. Potential exposure and cancer risk from formaldehyde emissions from Installed Chinese manufactured laminate flooring. *Risk Anal* 2018; 38(6):1128-1142.

Anderson EL, Sheehan PJ, Kalmes RM, Griffin JR. Assessment of health risk from historical use of cosmetic talcum powder. *Risk Anal* 2017; 37(5): 918-929.

Bogen KT, Sheehan PJ. Dermal versus total uptake of benzene from mineral spirits solvents during parts washing. *Risk Anal* 2014; 34(7):1336-1358.

Borby GP, Sheehan PJ, Berman DW, Bogen KT, Holm SE. Exposures from chrysotile-containing joint compound: evaluation of new model relating respirable dust to fiber concentrations. *Risk Anal* 2013; 33(1):161-176.

Berman DW, Borby GP, Sheehan PJ, Bogen KT, Holm SE. More on the dynamics of dust generation: The effects of mixing and sanding chrysotile, calcium carbonate and other components on the characteristics of joint compound dusts. *Ann Occup Hyg* 2012; 56(7):852-867.

Sheehan PJ, Borby GP, Berman DW, Bogen KT, Holm SE. Chamber for testing asbestos-containing products: validation and testing of a re-created chrysotile-containing joint compound. *Ann Occup Hyg*

2011; 55(7):797-809.

Brorby GP, Sheehan PJ, Berman DW, Bogen KT, Holm SE. Potential artifacts associated with historical preparation of joint compound samples and reported airborne asbestos concentrations. *J Occup Environ Hyg* 2011; 8:271-278.

Bogen K, Brorby G, Berman D W, Sheehan P, Floyd M. Measuring mixed cellulose ester filters under variable humidity conditions. *Ann Occup Hyg* 2011; 55:485-494.

Sheehan P, Mowat F, Weidling R, Floyd M. Simulation tests to assess occupational exposure to airborne asbestos from artificially weathered asphalt-based roofing products. *Ann Occup Hyg* 2010; 54:880-892.

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

Richter RO, Finley BL, Paustenbach DJ, Williams PDR, Sheehan PJ. An evaluation of short-term exposures of brake mechanics to asbestos during automotive and truck brake cleaning and machining activities. *J Exp Sci Environ Epidemiol* 2009; 19:458-474.

Martin R, Malzahn D, Hicks J, Sheehan P. Energy-saving thermal insulation — Industrial hygiene and occupational health considerations. *Indust Heating* 2008; 75:54-57.

Brorby GP, Sheehan PJ, Berman DW, Greene JF, Holm SE. Re-creation of historical chrysotile-containing joint compounds. *Inhalation Toxicol* 2008; 20:1043-1053.

Sheehan P, Malzahn D, Goswami E, Mandel JH. Simulation of benzene exposure during use of a mineral spirits solvent to clean elevator bearing housings. *Human Ecol Risk Assess* 2008; 14(2):421-432.

Finley BL, Richter RO, Mowat FS, Mlynarek S, Paustenbach DJ, Warmerdam JL, Sheehan PJ. Cumulative asbestos exposure for U.S. automobile mechanics involved in brake repair (circa 1950s-2000). *J Exp Sci Environ Epidemiol* 2007; 17:644-655.

Mowat F, Weidling R, Sheehan P. Simulation tests to assess occupational exposure to airborne asbestos from asphalt-based roofing products. *Ann Occup Hyg* 2007; 51(5):451-462.

Sheehan PJ, Warmerdam JM, Ogle S, Humphrey DN, Patenaude SM. Evaluating the risk to aquatic ecosystems posed by leachate from tire shred fill in roads using toxicity tests, toxicity identification evaluations, and groundwater modeling. *Environ Toxicol Chem* 2006; 25(2):400-411.

Williams PRD, Benton L, Sheehan P. The risk of MTBE relative to other VOCs in public drinking water in California. *Risk Anal* 2004; 24(3):621-634.

Paustenbach D, Lu E, Finley B, Brorby G, Sheehan P. Environmental and occupational health hazards associated with the presence of asbestos in brake linings and pads (1900 to present): A state-of-the-art review. *J Toxicol Environ Health, Part B*, 2003; 7:33-110.

Paustenbach D, Richter R, Finley B, Sheehan P. An evaluation of the historical exposures of mechanics to asbestos in brake dust. *Appl Occ Environ Hyg* 2003; 18:786-804.

Tsuji J, Williams P, Edwards M, Allamneni K, Kelsh M, Paustenbach D, Sheehan P. Evaluation of mercury in urine as an indicator of exposure to low levels of mercury vapors. *Environ Health Perspect* 2003; 111(4):623-630.

Williams P, Cushing C, Sheehan P. Data available for evaluating the risks and benefits of MTBE and ethanol as alternative fuel oxygenates. *Risk Anal* 2003; 23(5):1085-1115.

Williams P, Benton L, Sheehan P. MTBE in California's drinking water: A comparison of groundwater versus surface water sources. *Environ Foren* 2003; 4:175-189.

Williams P, Benton L, Warmerdam J, Sheehan P. Comparative risk analysis of six volatile organic compounds in California drinking water. *Environ Sci Technol* 2002; 36:4721-4728.

Williams PRD, Sheehan PJ. Overview of MTBE and TBA exposures and human health risks in the U.S. *Contam Soil Sed Water*, 2002; July/August 93-103.

Williams PRD, Sheehan PJ. A better perspective on the incidence and implications of MTBE in California's drinking water. *Contam Soil SedWater*, MTBE special issue 2001; 23-27.

Williams PRD, Scott PK, Sheehan PJ, Paustenbach DJ. A probabilistic assessment of household exposures to MTBE from drinking water. *Hum Ecol Risk Assess* 2000; (5):827-849.

Fuchsman PC, Barber TR, Sheehan PJ. Sediment toxicity evaluation: Spiked sediments tests with *Leptocheirus plumulosus*, *Hyalella azteca*, and *Chironomus tentans*. *Arch Environ Toxicol Chem* 1998; 35:573-579.

Iannuzzi TJ, Bonnevie NL, Huntley SL, Wenning RJ, Truchon SP, Tull JD, Sheehan PJ. Comments on the use of equilibrium partitioning to establish sediment quality criteria for nonionic chemicals. *Environ Toxicol Chem* 1995; 14(8):1257-1259.

Sheehan PJ, Loucks DL. Effects characterization. In: *Ecological Risk Assessment Issue Papers*. EPA 6301 R-94-009. U.S. Environmental Protection Agency, Office of Research and Development, Washington, DC, 1994.

Falerios M, Sheehan PJ, Schild K, Paustenbach DJ. Airborne concentrations of total and hexavalent chromium from contaminated soils at unpaved and partially paved commercial/industrial sites. *Air Waste Manage Assoc J* 1992; 42(1):40-48.

Paustenbach DJ, Sheehan PJ, Paull JM, Wisser LM, Finley BL. Review of the allergic contact dermatitis hazard posed by chromium contaminated soil: Identifying a "safe" concentration. *J Toxicol Environ Health* 1992; 37:177-207.

Paustenbach DJ, Meyer D, Sheehan PJ, Lau V. An assessment and quantitative uncertainty analysis of the health risks to workers exposed to chromium contaminated soils. *Toxicol Ind Health* 1991; 7(3):159-196.

Paustenbach DJ, Rinehart WE, Sheehan PJ. The health hazards posed by chromium contaminated soils in residential and industrial areas: Conclusions of an expert panel. *Regulat Toxicol Pharmacol* 1991; 13:195-222.

Sheehan P, Meyer D, Sauer M, Paustenbach D. Assessment of the human health risks posed by exposure to chromium contaminated soils at residential sites. *J. Toxicol Environ Health* 1991; 32(2):161-201.

Sheehan P, Ricks R, Ripple S, Paustenbach D. Field evaluation of a sampling and analytic method for airborne hexavalent chromium. *Am Ind Hyg Assoc J* 1991; 53(1):57-68.

Sheehan PJ. Statistical and non-statistical considerations in quantifying pollutant induced changes in microcosms. pp. 178-188. In: *Aquatic Toxicology and Hazard Assessment*, 12th Volume. ASTM STP 1027, American Society of Testing and Materials, Philadelphia, PA, 1989.

Mineau P, Sheehan PJ, Baril A. Pesticides and waterfowl on the Canadian prairies: A pressing need for

research and monitoring. ICBP Technical Publication No. 6, 1987.

Sheehan PJ, Baril A, Mineau P, Smith DK, Harfenist A, Marshall WK. The impact of pesticides on the ecology of prairie nesting ducks. Technical Report Series No. 19. Canadian Wildlife Service, 1987.

Grue CE, DeWeese LR, Mineau P, Swanson GA, Foster JR, Arnold PM, Huckins JN, Sheehan PJ, Marshall WK, Ludden AP. Potential impacts of agricultural chemicals on waterfowl and other wildlife inhabiting prairie wetlands: An evaluation of research needs and approaches. In: Trans. 51st N.A. Wildlife and National Research Conference, Wildlife Institute, Washington, DC, 1986.

Sheehan PJ, Axler RP, Newhook RC. Evaluation of simple generic aquatic ecosystem tests to screen the ecological impacts of pesticides. pp. 158-179. In: Community Toxicity Testing. ASTM STP 920, American Society of Testing and Materials, Philadelphia, PA, 1986.

Sheehan PJ, Knight AW. A multi-level approach to the assessment of ecotoxicological effects in a heavy metal polluted stream. *Verh Internat Verein Limnol* 1985; 22:2364-2370.

Shaw GG, Smith DK, Sheehan PJ, Mineau P. Environmental concerns. Proceedings, Symposium on the Future Role of Aviation in Agriculture. Associate Committee on Agricultural and Forestry Aviation, National Research Council Canada, pp. 47-63, 1984.

Geyer H, Sheehan PJ, Kotzias, Freitag D, Korte F. Prediction of ecotoxicological behavior of chemicals: Relationship between physico-chemical properties and bioaccumulation of organic chemicals in the mussel, *Mytilus edulis*. *Chemosphere* 1982; 11(11):1121-1134.

Siegfried CA, Sheehan PJ, Knight AW. The adults of *Oroperla barbara* (Needham). *Pan Pac Entomol* 1977; 53:125-128.

### **Books Edited**

Sheehan PJ, Klein W, Bourdeau P, Forte F (eds). Appraisal of Tests to Predict the Environmental Behavior of Chemicals. SCOPE 25. John Wiley & Sons, New York, NY, 1985.

Sheehan PJ, Miller DR, Butler GC, Bourdeau P (eds). Effects of Pollutants at the Ecosystem Level. SCOPE 22. John Wiley & Sons, New York, NY, 1984.

Vouk VB, Sheehan PJ (eds). Methods of Assessing the Effects of Chemicals on Reproductive Functions. SCOPE 20. John Wiley & Sons, New York, NY, 1983.

### **Book Chapters**

Sheehan P. Product risk assessment overview. In: Professional Practices of Product Stewardship. Hart GA (ed), Product Stewardship Society, Falls Church, VA, 2018.

Adams P, Goldman R, Hellerstein J, Jones, A, Lori A, Lowe J, Roy R, Sheehan P, Walton J. Product exposure assessment. In: Professional Practices of Product Stewardship. Hart GA (ed), Product Stewardship Society, Falls Church, VA, 2018.

Hart G, Sheehan P, Lori A, Hellerstein J, Lowe J, Jones A, Roy R, Goldman R, Walton J, Adams P. Product risk characterization. In: Professional Practices of Product Stewardship. Hart GA (ed), Product Stewardship Society, Falls Church, VA, 2018.

Singhal A, Posson M, Kalmes R, Gauthier A, Lewis R, Schenk J, Goswami E, Sheehan P. Proposition 65 risk assessment. In: Professional Practices of Product Stewardship. Hart GA (ed), Product Stewardship Society, Falls Church, VA, 2018.

Singhal A, Bogen K, Sheehan P. Wearable devices. In: Professional Practices of Product Stewardship. Hart GA (ed), Product Stewardship Society, Falls Church, VA, 2018.

Richter RO, Sheehan PJ. Modeling of health risks associated with combustion emissions. In: Air Quality Modeling- Theories, Methodologies, Computational Techniques, and Available Databases and Software. Zannetti P (ed), The EnviroComp Institute and Air and Waste Management Association, Pittsburgh, PA, 2005.

Sheehan PJ, Warmerdam J, Feng SS. Using probabilistic risk assessment methods to predict the effects of pesticides on aquatic systems and waterfowl that use them. In: Health Risk Assessment. Paustenbach DJ (ed), John Wiley & Sons, Inc., New York, NY, 2002.

Sheehan PJ, Dombrowski F, Unga M, Harmen C. Ecological risk assessment for hazardous waste incineration: Case study. In: Hazardous Waste Incineration: Evaluating the Human Health and Environmental Risks. Roberts SM (ed), Lewis Publishers, Inc., Boca Raton, FL, 1998.

Sheehan PJ. Methods for the assessment of effects of chemicals on ecological systems at a regional scale. In: Methods to Assess the Effects of Chemicals on Ecosystems. SCOPE 53. IPCS Joint Activity 23, SGOMSEC10. Linthurst RA, Bourdeau P, Tardiff RG (eds), John Wiley & Sons, Chichester, UK, 1995.

Sheehan PJ, Baril A, Mineau P, Paustenbach DJ. Predicting the effects of insecticides on aquatic organisms and the waterfowl that use them: An ecotoxicological risk assessment. pp. 827-857. In: Fundamentals of Aquatic Toxicology. Rand G (ed), Taylor and Francis, Washington, DC, 1995.

Sheehan PJ. Ecotoxicological considerations. In: Fundamentals of the Management of Toxic Chemicals. George Allen Unwin, London, 1991.

Sheehan PJ. Functional processes of ecosystems: Their use in assessing the effects of mixtures of chemicals. pp. 691-707. In: Methods for Assessing the Toxicology of Mixtures of Chemicals. SCOPE 30. John Wiley & Sons, New York, NY, 1986.

Korte F, Sheehan PJ, Klein W. The need for appraisal of environmental testing methods. pp. 1-11. In: Appraisal of Tests to Predict the Environmental Behavior of Chemicals. SCOPE 25. John Wiley & Sons, New York, NY, 1985.

Peakall DB, Calamari D, Crose H, Hackaber JW, Kozlowski TT, Lander V, Moustafa L, Sheehan P, Tucker RK, and Waldichuk M. Approaches to measuring chemical injury to non-human biota and ecosystems. pp. 85-106. In: Methods for Estimating Risk of Chemical Injury: Human and Non-Human Biota and Ecosystems. SCOPE 26. John Wiley & Sons, New York, NY, 1985.

Sheehan PJ. Effects on community and ecosystem structure and dynamics. pp. 51-100. In: Effects of Pollutants at the Ecosystem Level. SCOPE 22. John Wiley & Sons, New York, NY, 1984.

Sheehan PJ. Effects on individuals and populations. pp. 23-50. In: Effects of Pollutants at the Ecosystem Level. SCOPE 22. John Wiley & Sons, New York, NY, 1984.

Sheehan PJ. Functional changes in the ecosystem. pp. 101-145. In: Effects of Pollutants at the Ecosystem Level. SCOPE 22. John Wiley & Sons, New York, NY, 1984.

Sheehan PJ, Winner RW. Copper gradient studies in stream systems. pp. 255-271. In: Effects of Pollutants at the Ecosystem Level. SCOPE 22. John Wiley & Sons, New York, NY, 1984.

## **Presentations**

Sheehan P, Bus J, Lewis R, Winegar E, Li A. An assessment of historical occupational and non-occupational ethylene oxide exposure questions the applicability of EPA's Implied 10-6 increase in cancer

risk at an exposure level of 0.1 ppt. Presented at Society of Toxicology 59th Annual Meeting (virtual). Anaheim CA. March 15-19, 2020.

Hellerstein J, Sheehan P, Kalmes R. Product exposure assessment: modeling vs measuring user exposures. Presented at Product Stewardship 2019, Columbus, OH, September 9-12, 2019.

Li A, Sheehan P, Valdez-Flores C, Bogen KT. Updated modeling indicates historical sterilization worker ethylene oxide exposures were higher than assumed in the US EPA IRIS assessment. Presented at the Society of Toxicology 58th Annual Meeting, Baltimore, MD March 10-14, 2019.

Sheehan P, Hellerstein J. Consumer exposure model (CEM). Presented at Product Stewardship 2018. Washington, DC September 27-29, 2018.

Lewis R, Bogen K, Singhal A, Sheehan P. Novel method for estimating dermal contact with hand-applied cleaning solutions. Presented at the American Industrial Hygiene Conference and Expo. Philadelphia, PA May 21-23, 2018.

Sheehan P, Kalmes R, Posson M, Singhal A, Lewis R, Gauthier A. Challenges in assessing health risks from exposure to bisphenol-A (BPA) in consumer products. Presented at the Society of Toxicology 57th Annual Meeting. San Antonio, TX March 11-15, 2018.

Lewis R, Winegar E, Bogen KT, Singhal A, Sheehan P. Exposures to an ethanol based cleaning product. Presented at the American Industrial Hygiene Conference and Expo. Seattle, WA June 4-7, 2017.

Winegar E., Bogen KT, Lewis RC, Singhal A, Sheehan P. A use simulation study of a denatured alcohol cleaning product to assess potential worker exposure. Presented at the 56th Annual Meeting of the Society of Toxicology. Baltimore MD, March 12-15, 2017

Sheehan P, Kalmes K. Assessing exposure from consumer product use: Methods to address manufacturer, consumer and agency concerns. Presented at Society for Risk Analysis Annual Meeting, San Diego, CA December 11-15, 2016.

Singhal A, Posson M, Jones A, Lewis R, Gauthier A, Schenk J, Kalmes R, Sheehan P. Assessing risk for consumer products under California's Proposition 65 regulations. Presented at SETAC North America 37th Annual Meeting, Orlando, FL November 6-10, 2016.

Sheehan P, Singhal A, Kalmes R, Bogen KT. Formaldehyde emissions from Chinese manufactured laminate flooring: Is there a Proposition 65 Exposure Issue? Presented at the America Industrial Hygiene Conference and Expo, Baltimore, MA May 21-26, 2016.

Sheehan P, Bogen K, Singhal A, Kalmes R. Evaluating the Proposition 65 health significance of formaldehyde exposures from Chinese manufactured laminate flooring. Presented at 55th Annual Meeting of the Society of Toxicology, New Orleans, LA March 13-17, 2016.

Sheehan P, Lowney Y, Kalmes, R, Bogen K, 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 risks. Presented at SETAC North America 36th Annual Meeting, Salt Lake City, UT November 1-5, 2015.

Posson M, Bogen K, Glomski M, Sheehan P. A suite of integrated predictive models for the evaluation of consumer exposures to organic chemicals in paper products. Presented at SETAC North America 36th Annual Meeting, Salt Lake City, UT November 1-5, 2015.

Bogen K, Sheehan P, Singhal A, Kalmes R, Volberg V, Garry M. Wearable technology products and allergic contact dermatitis: Chemical exposure and risk assessment challenges & developments. Presented at SETAC North America 36th Annual Meeting, Salt Lake City, UT November 1-5, 2015.

Sheehan P, Bogen KT, Singhal A, Kalmes R, Robert M, Fedoruk MJ. Wearable products and allergic contact dermatitis: a new risk assessment challenge. Presented at the 54th Annual Meeting of the Society of Toxicology, San Diego, CA March 22-26, 2015.

Sheehan P, Cooper M, McNulty J, White K. Wearable technology - trends, design & risk considerations. Presented at the SFAI Thought Leadership Webinar. Sports Fitness Industry Association. November 18, 2014.

Sheehan P, Bogen K, Posson M, Singhal A, Glomski M, Hellerstein J. Assessing anthraquinone (AQ) exposure from food packaging: a product stewardship challenge in Europe. Presented at the American Industrial Hygiene Conference and Expo, San Antonio, TX May 31-June 5, 2014.

Sheehan P, Bogen KT, Singhal A. Estimating an acceptable intake of anthraquinone (AQ) in food packaging. Presented at the 53rd Annual Meeting of the Society of Toxicology, Phoenix AZ March 23-27, 2014.

Sheehan P, Kalmes R, Turnham P, Anderson E. Simulation study of potential historical user asbestos fiber exposure from cosmetic body talc use. Presented at the American Industrial Hygiene Conference and Expo, Montreal, Canada May 18-23, 2013.

Sheehan P, Bogen K, Posson M, Hellerstein J. Characterizing potential chemical exposures and associated risks from food packaging: A product stewardship challenge. Presented at the American Industrial Hygiene Conference and Expo, Montreal, Canada May 18-23, 2013.

Sheehan P, Heilman J, Bogen K. An evaluation of the Human Carcinogenic Potency of Methyl tert-butyl ether (MTBE): Considering new data and mode of action. Presented at the 52nd Annual Meeting of the Society of Toxicology, San Antonio TX March 10-14, 2013.

Sheehan P. Proposition 65 exposure assessment: Compliance considerations for foods. Presented at the Northwest Food Processors Expo and Conference 2013, Portland, OR January 14-15, 2013

Sheehan P, Bogen K. Cumulative Chrysotile Fiber Exposures from Sanding Historical Joint Compound formulations: Inter- vs. Intra-individual Variability. Presented at the Society for Risk Analysis Annual Meeting, San Francisco, CA December 9-12, 2012.

Sheehan P, Bogen K, Brorby G, Holm S. Considering mode of action in estimating a NSRL for 3-MCPD. Presented at the Society of Toxicology 51st Annual Meeting & Tox Expo, San Francisco, CA March 11-15, 2012.

Sheehan P, Mowat F. Simulation tests of occupational asbestos exposure from removal of artificially weathered roof coatings and cements. Presented at the American Industrial Hygiene Conference and Expo, Portland, OR May 14-19, 2011.

Sheehan P, Brorby G, Bogen K, Berman DW, Holm S. New basis for interpreting historical exposures to dust from chrysotile-containing joint compound. Presented at the American Industrial Hygiene Conference and Expo, Portland, OR May 14-19, 2011.

Brorby G, Boelter F, Jones R, Simmons C, Berman W, Sheehan P. Spiraling consequences of poor data quality. Professional Conference of Industrial Hygienists 2010, Fort Worth, TX, October 9-12, 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.

Brorby GP, Sheehan PJ, Berman DW, Holm SE. Re-interpreting historical exposure data associated with

the use of chrysotile-containing joint compound. Society of Toxicology 2010 Annual Meeting, Salt Lake City, UT, March 7-11, 2010.

Sheehan P, Dahlstrom D. Green building: Finding a better way to assure indoor air quality. 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.

Brorby G, Kalmes R, Goswami E, Mowat F, Sheehan P. Evaluating exposures to consumer products. Presented at the Society for Risk Analysis, 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, Malzahn D, Richter R, Sheehan P. Simulation and modeling techniques to reconstruct historical benzene exposures. Presented at the Society for Risk Analysis Meeting, Baltimore, MD, December 3-6, 2002.

Sheehan P, Mowat F, Weidling R. Simulation of asbestos release from asphalt-based roofing products. Presented at the American Industrial Hygiene Conference and Expo, Chicago, IL, May 13-18, 2006.

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.

Mowat FS, Sheehan PJ. Estimating asbestos exposures from historical products: Issues related to industrial hygiene and toxicology. Presented at the Andrews Asbestos Litigation Conference, San Antonio, TX, April 26-27, 2006.

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

Richter RO, Sheehan PJ, Bouse E. Potential environmental impact of mercury emissions from Portland cement kilns. Presented at the 2005 IEEE Cement Industry Technical Conference, Kansas City, MO, 2005.

Sheehan P, Brorby G, Kalmes R, Mowat F, Richter R, Finley B. Characterization of the cumulative asbestos exposures of U.S. automobile brake mechanics. Presented at the American Industrial Hygiene Conference and Expo, Anaheim, CA, May 23-26, 2005.

Finley B, Mowat F, Richter R, Brorby G, Craven B, Sheehan P. Evaluation of proposed threshold doses for chrysotile exposure and respiratory disease. Presented at the Society of Toxicology 2005 Annual Meeting, New Orleans, LA, March 6-10, 2005.

Finley B, Richter R, Mowat F, Mlynarek S, Paustenbach D, Warmerdam J, Sheehan P. Cumulative occupational asbestos exposures of U.S. brake repair mechanics. Presented at the Society for Risk Analysis 2004 Annual Meeting, Palm Springs, CA, December 5-8, 2004.

Paustenbach D, Richter R, Finley B, Williams P, Sheehan P. Evaluating asbestos exposure with vehicle brake cleaning and machining activities using short-term and TWA measurements. Presented at the Society for Risk Analysis 2004 Annual Meeting, Palm Springs, CA, December 5-8, 2004.

Sheehan P, Warmerdam J, Humphrey D, Patenaude S. Aquatic toxicity testing: Assessing the safe use of scrap tires as roadbed fill. Presented at the Fourth Society of Environmental Toxicology and Chemistry World Congress, Portland, OR, November 14-18, 2004.

Sheehan P. Environmental and occupational health hazards associated with the presence of asbestos in brake linings and pads (1900 to present): A state of the art review. Presented at the SAE Brake Colloquium and Exhibition, Detroit, MI, March 7-10, 2004.

Yost L, Greene J, Hays S, Kelsh M, Li A, Sheehan P. Derivation of a range of interim inhalation slope factors for TCE using physiologically based pharmacokinetic modeling. Presented at the Society of Toxicology 43rd Annual Meeting, Baltimore, MD, March 2004.

Williams P, Cushing C, Sheehan P. Evaluating the risks and benefits of MTBE and ethanol as alternative fuel oxygenates. Presented at the Society for Risk Analysis 23rd Annual Meeting, Baltimore, MD, December 7-10, 2003.

Richter R, Paustenbach D, Sheehan P. An evaluation of historical exposures of mechanics to asbestos from brake repair. Presented at the Society for Risk Analysis 23rd Annual Meeting, Baltimore, MD, December 7-10, 2003.

Paustenbach D, Williams P, Brorby G, Sheehan P. Residential exposures to elemental mercury due to releases from gas pressure regulators. Presentation at the Society for Risk Analysis 23rd Annual Meeting, Baltimore, MD, December 7-10, 2003.

Williams P, Benton L, Sheehan P. The risks of MTBE relative to other VOCs in public drinking in California. Presentation at the Society for Risk Analysis 23rd Annual Meeting, Baltimore, MD, December 7-10, 2003.

Finley B, Lu E, Brorby G, Sheehan P. Environmental and occupational hazards associated with the presence of asbestos in brake linings and pads (1900 to present): A "state-of-the-art" review. Presented at the SAE Brake Colloquium & Exhibition, Hollywood, FL, October 19-22, 2003.

Sheehan P, Williams P. Relative risks to consumers posed by MTBE and other VOCs in California's drinking water. Presented at the 13th Annual West Coast Conference on Contaminated Soils, Sediments and Water, San Diego, CA, March 17-20, 2003.

Williams P, Sheehan P. Human health and ecological risks of MTBE. . Presented at the 13th Annual West Coast Conference on Contaminated Soils, Sediments and Water, San Diego, CA, March 17-20, 2003.

Sheehan P, Warmerdam J. Assessing the effects of leachate from tire shreds used as roadbed fill on aquatic organisms. Presentation at the Society of Environmental Toxicology and Chemistry 23rd Annual Meeting, Salt Lake City, UT, November 16-20, 2002.

Sheehan P, Williams P. MTBE: Is it really a concern for drinking water in the United States? Presentation at the Hart World Fuels Conference Asia, Singapore, August 26-27, 2002.

Williams PRD, Sheehan PJ, Paustenbach DJ. A probabilistic assessment of household exposures to MTBE in California drinking water. Presentation at the Society of Toxicology Annual Conference, San Francisco, CA, March 25-29, 2001.

Sheehan PJ, Williams PRD. Risk assessment considerations for MTBE. Air Waste Management Association Winter Conference, Dallas, TX, February 12-13, 2001.

Sheehan PJ, Williams PRD, Paustenbach DJ. MTBE in California drinking water: A probabilistic assessment of exposures. Presentation at the International Society of Exposure Analysis Annual Conference, Monterey, CA, October 24-27, 2000.

Williams PRD, Sheehan PJ, Paustenbach DJ. MTBE ambient air and drinking water exposures in California. Presentation at the International Society of Exposure Analysis Annual Conference, Monterey, CA, October 24-27, 2000.

Sheehan PJ, Warmerdam JM. A probabilistic approach to estimating the indirect risks of pesticide spraying on ducklings. Presented at SETAC 20th Annual Meeting, Philadelphia, PA, November 1999.

Bernhardt T, Madl A, Exuzides A, Sheehan P. Chemical fingerprinting for litigation support: A case study of effective environmental forensics. Presented at Annual Meeting Society for Risk Analysis, Atlanta, GA, December 1999.

Sheehan P, Beach J, Dodge D. Ecological risk assessment for addressing litigation issues. Presented at SETAC 19th Annual Meeting, Charlotte, NC, 1998.

Sheehan PJ, Wenning RJ, Wright BD, Becklin DM. A prospective risk assessment of the potential ecological effects of removal of a dam on the Rogue River. Presented at SETAC 19th Annual Meeting, Charlotte, NC, 1998.

Sheehan PJ, Wenning RJ, Wright BD, King NM, Paustenbach DJ, Becklin DM. Assessing the ecological risks of dam removal. Presentation at the Society for Risk Analysis Annual Meeting and Exposition, 1998.

Alsop WR, Vishwanath GR, Sheehan PJ. Probabilistic methods to estimate potential exposures of endangered species. Presented at Annual Meeting Society for Risk Analysis, Washington, DC, 1997.

Alsop WR, Vishwanath GR, Sheehan PJ. Probabilistic methods to estimate potential exposures of endangered species to emissions associated with proposed incinerators. Presented at SETAC 18th Annual Meeting, San Francisco, CA, 1997.

Alsop WR, Beach JF, Sheehan PJ. Probabilistic methods to develop toxicity reference values for ecological effects assessments. Presented at SETAC 18th Annual Meeting, San Francisco, CA, 1997.

Fuchsman P, Barber T, Sheehan P, Newton F. Spiked sediment toxicity testing with hydrophobic organics: Review and hexachlorobenzene case study. Presented at SETAC 18th Annual Meeting, San Francisco, CA, 1997.

Sheehan P, Alsop B, Wenning R. Taking ecological risk assessment to the next level. Presented at Annual Meeting Society for Risk Analysis, Washington, DC, 1997.

Sheehan PJ, Alsop WR, Vishwanath GR, Kangas MJ. An application of probabilistic methods to estimate the distribution of potential exposures to a least tern population at a RCRA site. Presented at ASTM 7th Symposium on Environmental Toxicology and Risk Assessment, St. Louis, MO, 1997.

Sheehan PJ. Ecological risk assessment. Presented at Risk Assessment and Risk Management Workshop, Society for Risk Analysis, New Orleans, LA, 1996.

Alsop WR, Ghezlbash R, Sheehan PJ. Use of GIS in problem formulation phase of ecological risk assessment. Presented at SETAC 17th Annual Meeting, Washington, DC, 1996.

Alsop WR, Ghezlbash R, Sheehan PJ. Use of geographic information systems (GIS) in the problem formulation phase of ecological risk assessment. Presented at SETAC Northern California Regional Chapter, 6th Annual Meeting, Sacramento, CA, 1996.

Chappie D, Barber T, Sferra J, Fuchsman P, Sheehan P. Chronic effects of hexachlorobenzene on *Hyalella azteca* and *Chironomus tentans* in a spiked sediment bioassay. Presented at SETAC 17th Annual Meeting, Washington, DC, 1996.

Sferra J, Barber T, Fuchsman P, Sheehan P. Development of site-specific sediment no-effect concentrations based on synoptic chemical analysis and toxicity testing. Presented at SETAC 17th Annual Meeting, Washington, DC, 1996.

Sheehan PJ, Barber T, Dombrowski F, Burris J, Wenning R. Developing site-specific sediment toxicity criteria for hexachlorobenzene. Presented at Society of Risk Analysis Annual Meeting, New Orleans, LA, 1996.

Sheehan PJ, Barber T, Kangas M, Dombrowski F. Using multiple lines of toxicity test evidence to identify site-specific sediment quality criteria. Presented at SETAC 17th Annual Meeting, Washington, DC, 1996.

Sheehan PJ, Barber TR, Shaner S, Sferra J. Developing site-specific sediment toxicity criteria for persistent organic chemicals. Presented at SETAC Northern California Regional Chapter, 6th Annual Meeting, Sacramento, CA, 1996.

Sheehan PJ. Assessing chemical exposures to populations and ecosystems. Presented at Prevention Strategies for Living in a Chemical World, Collegium Ramazzini, Washington, DC, 1995.

Sheehan PJ. Using toxicity tests to assess the risks posed by contaminated sediments. Presented at SETAC Northern California Regional Chapter, 5th Annual Meeting, Santa Cruz, CA, 1995.

Sheehan PJ, Lee KH. If fish don't assimilate the lead that they ingest, is there a risk to fish consumers? Second SETAC World Congress, Vancouver, BC, 1995.

Sheehan PJ, Lee KH. Using probabilistic modeling to assess wildlife exposures to chemicals. Presented at Fifth SETAC Europe Congress, Copenhagen, Denmark, 1995.

Sheehan PJ, Tull JD, Dombrowski F. Using toxicity tests to assess the risks posed by contaminated sediments. Presented at Hydrocarbon Contaminated Soils: Expediting Cleanups in USEPA Region 6, New Orleans, LA, 1995.

Sheehan PJ. Application of Monte Carlo modeling to ecological risk assessment. Presented at Monte Carlo Modeling Workshop, Society of Risk Analysis, Baltimore, MD, 1994.

Sheehan PJ. Applying ecological risk assessment strategies to address environmental problems. Presented at AWMA/ACBA Seminar, Pittsburgh, PA, 1994.

Sheehan PJ, Tull JD. Developing screening procedures to focus ecological risk assessments. Presented at 15th Annual Meeting, Society of Environmental Toxicology and Chemistry, Denver, CO, 1994.

Sheehan PJ, Woods PE. Applying ecological risk assessment strategies to address environmental problems. Presented at AEHS Fifth Annual West Coast Conference, Long Beach, CA, 1994.

Sheehan PJ, Lee KH, Woods PE. Use of probabilistic exposure assessment methods for ecological risk assessments for CERCLA and RCRA sites. Presented at Annual Meeting, Society of Risk Analysis, Baltimore, MD, 1994.

Sheehan PJ. Application of Monte Carlo modeling to ecological risk assessment. Presented at Monte Carlo Modeling Workshop, Society for Risk Analysis, Savannah, GA, 1993.

Sheehan PJ. Ecological risk assessment. Presented at Principals of Risk Assessment Workshop, Society

for Risk Analysis, Savannah, GA, 1993.

Sheehan PJ. Ecological risk assessment at a regional scale. Presented at the Annual Meeting of the Society for Risk Analysis, Savannah, GA, 1993.

Sheehan PJ. Methods for the assessment of effects of chemicals on ecological systems at a regional scale. Presented at Scientific Group Methods for the Safety Evaluation of Chemical 10, Montpellier, France, 1993.

Hedgecock J, Ungs M, Bubier T, Sheehan P. Establishment of health-based remediation targets for petroleum-contaminated soils based on protection of aquatic organisms and human health. Presented at Association for the Environmental Health of Soils, Fourth Annual West Coast Conference on Contaminated Soils and Groundwater, 1993.

Harman CR, D'Alleinne CP, Sheehan PJ, Dombrowski FJ, Brooke KL. The use of a predictive ecological risk assessment in support of a hazardous waste incinerator siting permit. Presented at 14th Annual Meeting, Society of Environmental Toxicology and Chemistry, Houston, TX, 1993.

Sheehan PJ, Dombrowski F, Tull J, Ungs M, Lee K. A probabilistic approach to assessing ecotoxicological risk of chemical exposures via the food web. Presented at 14th Annual Meeting, Society of Environmental Toxicology and Chemistry, Houston, TX, 1993.

Sheehan PJ, Ungs M, Dombrowski F, Tull J, Otani J, Lee K. Expressing ecotoxicological risks as probabilities. Presented at the Annual Meeting of the Society for Risk Analysis, Savannah, GA, 1993.

Sheehan PJ, Tull JD, Ludwig D. Disturbance versus chemicals: Interpreting chemical effects on biota. Presented at 13th Annual Meeting, Society of Environmental Toxicology and Chemistry, Cincinnati, OH, 1992.

Tull JD, Brown S, Sheehan PJ. A field evaluation of the role of AVS in controlling the toxicity of metals in intertidal marine sediments. Presented at 13th Annual Meeting, Society of Environmental Toxicology and Chemistry, Cincinnati, OH, 1992.

Sheehan PJ. Ecological risk assessment: Multiple approaches. Presented at 12th Annual Meeting, Society of Environmental Toxicology and Chemistry, Seattle, WA, 1991.

Sheehan PJ, Bruce G, Paustenbach DJ. A sampling and analytical method for environmental levels of airborne hexavalent chromium. Presented at AWMA Current Issues in Air Toxics, Sacramento, CA, 1991.

Sheehan PJ. Validation of a sampling method for ambient levels of hexavalent chromium. Presented at EPA/AWMA International Symposium on Measurement of Toxic and related Air Pollutants, Raleigh, NC, 1990.

Sheehan PJ. Upcoming changes in the practices of risk assessment. Presented at Hazmacon '89, Santa Clara, CA, 1989.

Sheehan PJ. Progress in bioreclamation of contaminated groundwater. Presented at 1988 Caltran's Research and Development Program Conference, Sacramento, CA, 1988.

Sheehan PJ, Schneiter RW, Mohr TKG, Gersberg RM. Bioreclamation of gasoline contaminated groundwater without oxygen addition. Proceedings, 2nd National Outdoor Action Conference on Aquifer Restoration, Groundwater Monitoring and Geophysical Methods, National Water Well Association, Dublin, OH, 1988.

Sheehan PJ, Schneiter RW, Mohr TKG, Gersberg RM. Progress in bioremediation of contaminated groundwater without oxygen addition. Proceedings, Hazmacon '88. Association of Bay Area

Governments, Oakland, CA, 1988.

Sheehan PJ, Schneiter RW, Mohr TKG, Gersberg RM. Progress in the bioreclamation of gasoline contaminated groundwater without oxygen addition. Presented at Hazmacon '88, Anaheim, CA, 1988.

Sheehan PJ, Mathur D, Dodge D, Paustenbach DJ. Background risks associated with exposure to n-nitrosodimethylamine (NDMA): Is something amiss in the regulation of this chemical? Abstract 75.02. Final Program and Abstracts. Society for Risk Analysis Annual Meeting and Exposition, 1988.

Schneiter RW, Sheehan PJ, Nosil AW. Dynamic flow-through bioassay for demonstrating suitability of direct discharge of contaminated groundwater to a POTW. Proceedings, Hazmacon '87. Association of Bay Area Governments, Oakland, CA, 1987.

Sheehan PJ, Schneiter RW, Mohr TKG, Gersberg RM. Bioreclamation of gasoline contaminated groundwater: Step by step. Presented at 8th Annual Meeting, Society of Environmental Toxicology and Chemistry, Pensacola, FL, 1987.

Sheehan PJ. A comparison of three community toxicity test models. Presented at 7th Annual Meeting, Society of Environmental Toxicology and Chemistry, Alexandria, VA, 1986.

Sheehan PJ. Utility of toxicity data from various levels of biological complexity in predicting hazard in aquatic ecosystems. Presented at 6th Annual Meeting, Society of Environmental Toxicology and Chemistry, St. Louis, MO, 1985.

Sheehan PJ. Application of ecological hazard analysis to predict the indirect effects of insecticides on ducklings. Presented at 5th Annual Meeting, Society of Environmental Toxicology and Chemistry, Arlington, VA, 1984.

Sheehan PJ. A multi-level approach to ecotoxicological assessment of pollutant effects. Presented at SIL Meeting, Lyon, France, 1983.

Sheehan PJ. Effects of chemical mixtures on ecosystem function. Presented at SGOMSEC Workshop, Guilford, England, 1983.

Sheehan PJ. Predictive tests utilizing ecosystem processes as end points. Presented at SGOMSEC Workshop, Rome, Italy, 1982.

Sheehan PJ. Methods for assessing the effects of chemicals on reproductive function in amphibians and reptiles. Presented at SGOMSEC Workshop, Ispra, Italy, 1981.

Sheehan PJ, Knight AW. Thirty-five years of copper effluent into Little Grizzly Creek. Presented at the 41st Annual Meeting of the American Society of Limnology and Oceanography, Victoria, BC, 1978.