

# Kara S. Franke, M.P.H.

ASSOCIATE DIRECTOR, HEALTH SCIENCES  
SUPERVISING SCIENTIST

## CONTACT INFORMATION

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ToxStrategies LLC  
31 College Place, Suite B118  
Asheville, NC 28801  
Phone (828) 393-0334  
[kfranke@toxstrategies.com](mailto:kfranke@toxstrategies.com)

## PROFESSIONAL PROFILE

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Kara Franke is an Associate Director of ToxStrategies' Health Sciences practice and is based in Asheville, NC. Her primary training and areas of expertise include environmental and occupational epidemiology, risk assessment, statistical analysis and data visualization, toxicology, occupational safety, and biology. Ms. Franke regularly performs the roles of information specialist and evidence analyst for ToxStrategies. She is responsible for conducting investigational and systematic literature reviews in PubMed, Embase, and other public and proprietary databases. She routinely reviews toxicological and epidemiological literature, producing evidence tables, conducting critical appraisal, and generating integrated syntheses and data visualizations. In addition, she has been involved with a systematic assessment of mechanistic data as part of efforts related to relative potency, characterization of dose-response, determination of thresholds for genotoxic compounds, and endocrine disruption. Ms. Franke also performs landscape analyses associated with potential health effects and exposure to agents in food and consumer products.

Ms. Franke's past work has focused on data management and research support related to substance use disorders, maternal and child health, medical intervention outcomes, and medical provider training; and has included occupational safety and training, audits and inspections, and maintaining compliance with federal, state, and local H&S regulations; as well as comprehensive literature reviews and litigation support for expert testimony.

## EDUCATION AND DEGREES EARNED

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- 2006 Master of Public Health, Occupational and Environmental Epidemiology, University of Michigan School of Public Health
- 2004 Bachelor of Science, Biology, University of Wisconsin, Madison

## PROFESSIONAL ASSOCIATIONS

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International Society for Environmental Epidemiology (2018–present)

Society for Risk Analysis (2018–present)

## SELECTED PROFESSIONAL EXPERIENCE

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### ***Systematic Review***

Review and extract dose-response and reference-dose data from publications to update a database of relative potency estimates (REPs) for congeners of TCDD and PCB.

Utilize proprietary systematic review software to screen and extract data in publications measuring endpoints associated with endocrine disruption activity, to assess potential risk associated with exposure via consumer products.

### ***Population Health Research***

Managed a database using SPSS to track health-care utilization and outcomes among prenatal patients with substance-use disorders. Collected data from Electronic Health Records on demographics, exposure levels and substances, confounding diagnoses and pharmaceuticals, health-care utilization markers, and birth outcomes. Cleaned and modified existing data for improved clarity and efficiency. Performed statistical analysis to check data integrity.

Developed a survey to measure the effectiveness of a substance-use and treatment didactic. Merged pre- and post-treatment data and analyzed results using SAS. Using Excel, modified existing chart templates to create modern barbell charts to effectively display results for pre- and post-intervention.

Interviewed office-based opioid treatment patients to evaluate the existing treatment protocol and identify quality improvement opportunities when prescribing opioid-replacement therapy drugs and providing concurrent primary care and mental health care.

### ***Environmental Health***

Collected and evaluated data in published and unpublished literature related to historical ambient asbestos levels in urban and rural areas and buildings.

Contributed to an assessment of historical exposures to elemental mercury following an industrial mercury spill. Created time-activity estimates in a variety of settings for individuals involved, based on plaintiff testimony, to estimate individual exposure levels.

Evaluated and analyzed data pertaining to respiratory disease and neighborhood of residence in a cohort of adults in Durban, South Africa; examined the relationship between living in an industrial area and the occurrence of chronic obstructive pulmonary disease, asthma, and other respiratory diseases by statistical analysis.

Conducted field research in Hardee County, Florida, following the 2006 hurricane season. Collected qualitative data via interviews and media research to examine the health effects and social effects experienced by female migrant workers and their families as a result of the storms and subsequent displacement.

### ***Occupational Health***

Ensured compliance with federal and local laws and regulations regarding workplace safety, hazardous waste management, and hazard communication at a medical research facility and a small, liberal arts college. Streamlined the work-injury reporting process with electronic forms and community outreach, resulting in more efficient Workers Compensation coverage coordination.

Improved and modernized safety training sessions and digital training resources, including videos, presentations, and infographics, realizing cost savings for the college on digital training subscriptions from outside vendors. Developed and delivered training on topics such as Annual OSHA training, ladder safety, chemical safety and storage, environmental hazards, and bloodborne pathogens. Guest-lectured in a college-level business class on occupational safety and risk management.

Contributed to an assessment of vinyl chloride in consumer products. Evaluated case materials for information on frequency of use of hair spray, ventilation in hair salons, and types of products used.

Researched the frequency and severity of injuries and fatalities associated with all-terrain vehicle use in occupational and recreational settings, using data from the Bureau of Labor Statistics and the Consumer Products Safety Commission.

Performed extensive reviews of current and historical literature relating to birth defects among children of female workers in semiconductor manufacturing facilities, and the relation to congenital cytomegalovirus infection. Evaluated the available epidemiological evidence of associations between birth defects and chemical exposures in semiconductor manufacturing facilities, and between birth defects and congenital cytomegalovirus infection.

### ***Epidemiology***

Conducted an extensive review of epidemiological literature reporting relative risks of various cancer endpoints among workers exposed to chromium.

Reviewed and summarized epidemiological literature on relative risks of esophageal cancer, lung cancer, mesothelioma, and asbestosis among drywall workers and plasterers.

Evaluated the risk of asbestos-related diseases among various craftsmen, including insulators, pipefitters and plumbers, boilermakers, carpenters, electricians, laborers, millwrights, sheet-metal workers, welders, and painters. Reviewed scientific publications reporting relative risks of lung cancer and mesothelioma among these crafts and conducted a meta-analysis.

### ***Industrial Hygiene***

Performed qualitative respirator fit testing using NIOSH methods to ensure compliance with OSHA regulations for respirator use.

Developed a sampling plan to test lead exposure during manual removal of peeling lead-containing paint on a building exterior and interpreted the results.

Assisted in indoor air quality investigations using various air-sampling devices, including passive badges and gas monitors, along with surface-dust sampling.

### ***Litigation Support***

Collated and summarized publications from mid-2016 to mid-2018 on coffee and multiple cancer endpoints; created summary data tables to improve data accessibility for various stakeholders. Surveyed recent landscape of overall coffee and caffeine literature for relevant publications.

Managed litigation support on cases involving potential asbestos exposure associated with gaskets and packing on pumps, joint compound materials, and friction products. Reviewed asbestos literature related to such products, Navy documents, and case materials for use in the preparation of expert testimony and reports. Assisted in the preparation of expert reports and trial directs.

## MANUSCRIPTS

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Fitch S, Blanchette A, Haws LC, **Franke K**, Ring C, DeVito M,... Wikoff DS. 2024. Systematic update to the mammalian relative potency estimate database and development of best estimate toxic equivalency factors for dioxin-like compounds. *Regul Toxicol Pharmacol* 147:105571; doi: 10.1016/j.yrtph.2024.105571.

Panko J, Mittal L, **Franke K**, Maberti S, Zollers S, Millison K, et al. 2024. Industry-wide review of potential worker exposure to 1,3-butadiene during chemical manufacturing and processing as a reactant. *J Occup Environ Hyg* 21(1):13-23; doi: 10.1080/15459624.2023.2264329. PMID: 3778845.

Henderson RG, **Franke KS**, Payne LE, Franzen A. 2023. Cannabidiol safety data: A systematic mapping study. *Cannabis Cannabinoid Res* 8(1):34–40; doi: 10.1089/can.2022.0100. PMID: 36251454.

Russell A, Fromewick J, Macdonald B, Kimmel S, **Franke K**, Leach K, Foley K. 2021. Drivers of scope of practice in family medicine: A conceptual model. *Ann Fam Med* 19(3):217–223; doi: 10.1370/afm.2669. PMID: 34180841.

Wikoff DS, Bennett DC, Brorby GP, **Franke KS**. 2020. Evaluation of potential human health risk associated with consumption of edible products from livestock fed ration supplemented with Red Lake Diatomaceous Earth. *Food Addit Contam A* 37(5):804-814; doi: 10.1080/19440049.2020.1727963.

Doepker C, **Franke K**, Myers E, Goldberger JJ, Lieberman HR, O'Brien C, Peck J, Tenenbein M, Weaver C, Wikoff D. 2018. Key findings and implications of a recent systematic review of the potential adverse effects of caffeine consumption in healthy adults, pregnant women, adolescents, and children. *Nutrients* 10:1536; doi: 10.3390/nu10101536.

**Franke K**, Paustenbach D. 2011. Government and Navy knowledge regarding health hazards of asbestos: A state of the science evaluation (1900 to 1970). *Inhal Toxicol* 23(S3):1–20; doi: 10.3109/08958378.2011.643417. PMID: 22200078.

## ABSTRACTS AND PRESENTATIONS

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Reátegui-Zirena EG, Lange SS, Jenkins A, Heintz MM, **Franke K**, Perry CS, Thompson C, et al. Acute health-based screening level derivation for cyanotoxins (microcystin, cylindrospermopsin and anatoxins). Abstract 7.05P-Th-197, Society of Environmental Toxicology and Chemistry, 45th Annual Meeting, Fort Worth, TX, October 2024.

**Franke K**, Vincent M, Rogers S, Rivera B, Wikoff D. Assessment of non-occupational exposures to cleaning products and the incidence of asthma and respiratory disease. Abstract 3393, Society of Toxicology 63<sup>rd</sup> Annual Meeting, Salt Lake City, UT, March 2024.

Henderson RG, Franzen A, **Franke K**, Payne L, Schmitt D, Wikoff D. Creating a literature database for cannabidiol (CBD): Systematic evidence mapping. Poster for Society of Toxicology 59<sup>th</sup> Annual Meeting, Virtual, 2020.

Borghoff S, Fitch S, Britt J, **Franke K**, Wikoff D. Application of the EFSA/ECHA endocrine disruption guidance as a framework for evidence integration in a weight-of-evidence (WoE) analysis for oxybenzone (BP-3). Poster at Evidence Integration in Chemical Assessments: Challenges Faced in Developing and Communicating Human Health Effect Conclusions. National Academies of Sciences, Engineering, and Medicine, Washington, D.C., 2019.

Schactman J, **Franke K**, Fromewick J. The elephant in the room: Substance use curriculum in family medicine residency. Presented at the Society of Teachers of Family Medicine Conference, Washington, D.C., 2018.

**Franke K.** Stir it up: Collaborating on composting safety. 64th Annual Conference of the Campus Safety Health and Environmental Management Association, Tucson, Arizona, 2017.

**Franke K.** Approachable sustainability ideas from a green college. Presented at the Regional Conference of the Campus Safety Health and Environmental Management Association, Raleigh, North Carolina, 2015.

Bartlett J, **Franke K.** Don't run with scissors: Collaborative shop safety. Presented at the 61st Annual Conference of the Campus Safety Health and Environmental Management Association, Palm Springs, California, 2014.

**Franke K,** Aguilera C. Utilizing new tools to engage, educate, and protect. Presented at the 60th Annual Conference of the Campus Safety Health and Environmental Management Association, Orlando, Florida, 2013.

**Franke K,** Paustenbach D. Government and Navy knowledge and occupational health programs regarding asbestos (1900 to 1970). Presented at the 21st Annual International Society of Exposure Science Conference, Baltimore, Maryland, 2011.

Phelka AD, **Franke K,** Welch A. An assessment of the potential health hazards associated with exposures to chrysotile asbestos in drywall accessory products. Presented at the 48th Annual Meeting of the Society of Toxicology, Baltimore, Maryland, 2009.

**Franke K,** Sahmel J. Characterization of available data on injuries and fatalities associated with all-terrain vehicle use in occupational and recreational settings. Presented at the 4th National Occupational Injury Research Symposium #P29, Pittsburgh, Pennsylvania, 2008.

## CERTIFICATIONS AND TRAINING

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February 2018	Programming 2, SAS Institute, Cary, NC
January 2018	Programming 1, SAS Institute, Cary, NC
July 2014	Resource Conservation and Recovery Act (RCRA) for Colleges and Universities, CSHEMA, Palm Springs, CA
June 2014	10-Hour Construction Industry Awareness Course, North Carolina Department of Labor, Asheville, NC
March 2014	Multi-Hazard Emergency Planning for Higher Education, FEMA Emergency Management Institute, Raleigh, NC
September 2013	American Red Cross First Aid/CPR/AED Instructor, American Red Cross Asheville Chapter, Asheville, NC
January 2013	40-Hour HAZWOPER, OSHA Training Institute, Rocky Mountain Education Center, Lakewood, CO
April 2013	Environmental Health Training in Emergency Response, Center for Domestic Preparedness, Anniston, AL