

Christopher E Comerford, MPH

Current Position

Senior Health Scientist

Discipline Areas

- > Exposure Assessment
- > Industrial Hygiene
- > Toxicology

Years' Experience

6 years

Joined Cardno

2014

Education

- > MPH, Environmental Health Science, The University of Georgia, 2014
- > BS, Biology, The University of North Carolina at Chapel Hill, 2008

Summary of Experience

Mr. Chris Comerford is a Senior Health Scientist with Cardno ChemRisk. He completed his MPH specializing in Environmental Health Science from the University of Georgia. Mr. Comerford's primary areas of training and areas of expertise include exposure assessment, industrial hygiene, and toxicology. He has been involved in assessing risk to workers, communities, and consumers exposed to a variety of chemicals, such as asbestos, petroleum and dispersants, herbicides, BTEX, diacetyl, formaldehyde, and lead. He also has research and laboratory experience in microbiology, pharmacology, and biogeochemistry. Mr. Comerford completed his graduate practicum at the Centers for Disease Control and Prevention (CDC) in Atlanta, where he evaluated new blood lead testing strategies to increase screening coverage in at-risk child populations. In his current position, Mr. Comerford is routinely involved in providing and managing litigation support, performing quantitative exposure assessments, and conducting comprehensive literature reviews.

Significant Projects

Litigation Support

Managed litigation cases related to asbestos exposure from drywall accessory products, thermoplastics, phenolics, cement piping, gaskets, packing, and automotive and aircraft friction products. Reviewed asbestos literature and case materials for use in the preparation of expert reports, testimony, and trial directs. Work has included conducting state-of-the-art reviews of industrial hygiene practices, quantitative exposure reconstruction, and evaluation of regulatory requirements.

Managed litigation cases involving regulatory requirements and industry practice of premises owners as they relate to both site owner and contractor employee health and safety. Evaluated multi-employer work sites with respect to claims regarding occupational exposure to asbestos and other hazards and chemicals.

Managed and/or provided litigation support in cases involving occupational and non-occupational exposures to petroleum and dispersants, herbicides, BTEX, diacetyl, formaldehyde, and lead. Reviewed and interpreted scientific literature, government documents, and case materials for use in the preparation of expert reports, testimony, and trial directs.

Quantitative Exposure Reconstruction and Industrial Hygiene

Performed quantitative exposure assessments to agents including but not limited to asbestos, diacetyl, benzene, and formaldehyde in various occupational and consumer product settings. Evaluated occupational and non-occupational exposures from commercial and industrial products using published literature, historical industrial hygiene data, and exposure simulation data. Compared exposures against current and historical recommended exposure limits set by regulatory and government agencies.

Evaluated airborne asbestos concentrations generated during various floor tile-handling activities and characterized potential exposures and health risks for workers and bystanders.

Evaluated diacetyl exposures that would plausibly occur in a small coffee shop during the preparation and consumption of unflavored coffee to determine if exposures exceeded recommended occupational exposure limits.

Research (Graduate Studies)

Researched and performed microbiological sampling methods to determine potential contamination of *Cronobacter sakazakii* in residential locations.

Participated in two research cruise expeditions to the Gulf of Mexico's Mississippi Canyon (MC) following the *Deepwater Horizon* Oil Spill (September 2010 and July 2011). Collected and processed sediment core and water column samples, and assisted with studies of acute impact of hydrocarbons on marine microbial communities.

Professional Honors/Awards

- > Recipient of American Industrial Hygiene Conference & Expo (AIHce)
 - > "Best of Session" Poster Award. Season 403. 2016 – *Characterization of Naturally Occurring Airborne Diacetyl Concentrations Associated with the Preparation and Consumption of Unflavoured Coffee*
 - > "Best of Session" Poster Award. Session 403. 2015 - *Pilot Study of Exposures to Airborne Concentrations of Naturally Occurring Diacetyl During Coffee Consumption*

Membership to Societies

- > American Industrial Hygiene Association (AIHA)
- > Delta Omega Public Health Honor Society
- > Golden Key Honor Society

Publications

Peer-Reviewed Publications

- > Perez, A.L., M.L. Nelson, T.J. Cheng, C.E. Comerford, and P.K. Scott. 2018. A meta-analysis of airborne asbestos fiber concentrations from work with or around asbestos-containing floor tile. *Int J Occup Env Health*. 24(3-4): 134-148.
- > Pierce, J.S., A. Abelmann, J.T. Lotter, C.E. Comerford, K. Keeton, B.L. Finley. 2015. Characterization of naturally occurring airborne diacetyl concentrations associated with the preparation and consumption of unflavored coffee. *Toxicology Reports*. 2:1200-1208.
- > Segarra, K.E.A., C.E. Comerford, J. Slaughter, and S.B. Joye. 2013. Impact of electron acceptor availability on the anaerobic oxidation of methane in coastal freshwater and brackish wetland sediments. *Geochimica et Cosmochimica Acta*. 115:15-30.
- > Carlson, S.L., S. Kumar, D.F. Werner, C.E. Comerford, and A.L. Morrow. 2013. Ethanol activation of PKA regulates GABAA alpha1 receptor function and trafficking in cultured cerebral cortical neurons. *Journal of Pharmacology and Experimental Therapeutics*. 345:317-325.
- > Werner, D.F., S. Kumar, H.E. Criswell, A. Suryanarayanan, J.A. Fetzer, C.E. Comerford, and A.L. Morrow. 2011. PKCgamma is required for ethanol-induced increases in GABA(A) receptor alpha4 subunit expression in cultured cerebral cortical neurons. *Journal of Neurochemistry*. 116:554-563.
- > Kumar, S., A. Suryanarayanan, K.N. Boyd, C.E. Comerford, M.A. Lai, Q. Ren, and A.L. Morrow. 2010. Ethanol Reduces GABAA α 1 Subunit Receptor Surface Expression by

a Protein Kinase Cy-Dependent Mechanism in Cultured Cerebral Cortical Neurons. *Molecular Pharmacology*. 77(5):793-803.

- > Kumar, S., K.N. Boyd, C.E. Comerford, and A.L. Morrow. 2009. Ethanol-induced internalization of $\alpha 1$ subunit-containing GABA- α receptors is dependent upon PKC gamma activity in cultured cerebral cortical neurons. *Alcoholism-Clinical and Experimental Research* 33(6): Special Issue 24A.

- > Comerford, C.E., J.S. Pierce, A.R. Riordan, T.A. Tarpey. 2019. Esophageal cancer in petroleum refinery workers – results of a preliminary meta-analysis. Poster Presentation at American Industrial Hygiene Conference & Exposition (AIHce) May 20-22, 2019, Minneapolis, MN.

- > Pierce, J.S., A. Abelmann, J.T. Lotter, C.E. Comerford, K.A. Keeton and B.L. Finley. 2016. Characterization of Naturally Occurring Airborne Diacetyl Concentrations Associated with the Preparation and Consumption of Unflavored Coffee. Poster Presentation at American Industrial Hygiene Conference & Exposition (AIHce) May 21-26, 2016, Baltimore, MD.

- > Spicer, L.J., J. Lotter, C. Comerford, A. Abelmann, J.S. Pierce and B.L. Finley. 2015. Pilot Study of Exposures to Airborne Concentrations of Naturally Occurring Diacetyl During Coffee Consumption. Poster presentation at the American Industrial Hygiene Conference & Expo (AIHce). May 30-June 4, 2015. Salt Lake City, UT.

- > Pierce, J.S., A. Abelmann, J. Lotter, C. Comerford, K. Keeton and B.L. Finley. 2015. Characterization of diacetyl exposures associated with the preparation and consumption of unflavored coffee. Poster presentation at the 54th Annual Meeting and Society of Toxicology (SOT) Meeting at the San Diego Convention Center, San Diego, CA; March 22-26, 2015.

Presentations