



Becca Brewster

Current Position

Senior Associate
Health Scientist I

Discipline Areas

- > Environmental Health
- > Microbiology
- > Ecology

Years' Experience

3

Joined Cardno

2017

Education

- > BS, Ecology and Evolutionary Biology and Environmental Science, University of Michigan, 2016

Summary of Experience

Ms. Becca Brewster is a Senior Associate Health Scientist with Cardno ChemRisk. She earned a BS from the University of Michigan in both Ecology and Evolutionary Biology and Environmental Science. Ms. Brewster assisted with several research projects throughout her undergraduate career at the University of Michigan School of Public Health. The projects included qualitatively assessing Chinese involvement, accidents, and injuries in small-scale gold mining in Ghana, characterizing biofilm development in point-of-use water filters, and the infection risk and health impact of waterborne *Helicobacter pylori* in Lima, Peru. At Cardno ChemRisk, Ms. Brewster is routinely involved in litigation support for asbestos cases. She has also assisted with diacetyl, talc, and formaldehyde cases. She supports and manages projects involving health risks associated with biological and chemical contaminants, preservatives, and undeclared allergens found in foods, dietary supplements, cosmetic products, and consumer goods. Additionally, Ms. Brewster has provided toxicology support for various flavorings and hazardous and potentially hazardous constituents (HPHCs), performed microbial risk assessments following product testing, and assisted with environmental assessments from disposal of electronic nicotine delivery systems (ENDS). Recently, she has provided occupational health and safety support during the COVID-19 pandemic.

Significant Projects

Food and Consumer Product Safety

Microbiological Contaminants

Prepared a source assessment and human health risk assessment of *Salmonella* in a dietary supplement. Reviewed product and facility testing data, prepared a chronology of events, commented on the source of contamination, and performed a screening level risk assessment. Additionally, reviewed and commented on GMPs and SOPs, analytical methodologies, and reported outbreaks and product recalls from *Salmonella*.

Performed hazard identification research for *Penicillium chrysogenum* species complex and *Penicillium rubens* for a contaminated juice product. Researched and identified hazards associated with *Penicillium concentricum* and associated mycotoxins, reviewed reported outbreaks and product recalls, and assisted with qualitative exposure assessment and risk characterization for contaminated hair balm product.

Provided a screening level review of literature and conclusions regarding potential human health hazards associated with the consumption of fish contaminated with *Listeria innocua*.

Chemical Contaminants

Researched the individual and synergistic toxicity of Kava Kava and Cannabidiol (CBD) in a tincture product, to determine whether there the two ingredients produced potentially toxic effects in humans.

Performed a screening level risk assessment on the potential human health risks from consumption of food and dietary supplement products containing flax seed contaminated

with trace amounts of the pesticide haloxyfop. Conducted hazard identification and toxicology review, exposure assessment, and risk characterization.

Regulatory Support

Reviewed and summarized information from toxicological databases and primary literature regarding toxicological endpoints associated with inhalation and ingestion of flavorings and harmful and potentially harmful constituents (HPHCs) used in electronic nicotine delivery systems (ENDS).

Reviewed and synthesized literature regarding microbial contaminants in ENDS, smokeless tobacco products, and combustible cigarettes. Summarized available inhalation and oral health guidance values for relevant microbial contaminants, including total bacteria, total fungi, endotoxin, beta-gulcan, and various mycotoxins. Reported microbial results from product testing data, and commented on potential associated health risks.

Assisted with preparing inputs and generating outputs for various ENDS disposal scenarios using EFAST modeling program.

Infection Control

Provided worker health and safety support for pipeline workers during the COVID-19 pandemic, which included development of employee on-boarding procedures and a review of existing health and safety protocols. Performed research, reviewed existing government guidance and scientific literature, prepared technical plans in the form of reports, notes, and decision trees, and managed the production of deliverables.

Litigation Support

Managed litigation support for cases involving occupational and non-occupational exposure to asbestos from products, including gaskets, packing, boilers and HVAC equipment, friction materials, and laboratory products. Reviewed and synthesized case materials and literature for use in the preparation of expert reports, testimony, and presentations.

Performed qualitative and quantitative exposure assessments and assessment of the health risks associated with the use of asbestos-containing gaskets, packing, and laboratory products.

Provided general litigation support, including case material and literature reviews, for other chemicals, including formaldehyde, diacetyl, and talc.

Environmental Health Research

Reviewed and summarized literature regarding *Legionella* presence in U.S. residential, commercial, and hospital water systems.

Aimed to assess the risk of infection and health outcomes from consuming water contaminated with *Helicobacter pylori* in Lima, Peru. Performed animal studies, analyzed water samples, and assessed viability of domestic drinking water treatment systems to contribute to an evolving quantitative microbial risk assessment of *H. pylori*. Assisted with

literature review, sample preparation, data collection, data management, and manuscript writing.

Researched the microbial community and development of biofilms in domestic, point-of-use water filters used in Qatar. Developed methodology for microbial sample collection, DNA extraction, sequencing, and microscopy to determine biofilm presence and composition.

- > Society for Risk Analysis (SRA), 2019 - Current

Membership and
Service to
Professional
Societies

Publications

Peer-Reviewed Publications

- > Wu, L., D. Ning, B. Zhang, ... R.K. Brewster, et al. 2019. Global diversity and biogeography of bacterial communities in wastewater treatment plants. *Nature Microbiology*. 4:1183–1195. DOI:10.1038/s41564-019-0426-5.
- > Boehnke, K.F., R.K. Brewster, B.N. Sanchez, M. Valdivieso, A. Bussalleu, M. Guevara, C.G. Saenz, S.O. Alva, E. Gil, C. Xi. 2018. An assessment of drinking water contamination with *Helicobacter pylori* in Lima, Peru. *Helicobacter*. DOI: 10.1111/hel.12462.
- > Boehnke, K.F., K.A. Eaton, C. Fontaine, R. Brewster, J. Wu, J.N.S. Eisenberg, M. Valivieso, L.H. Baker, C. Xi. 2017. Reduced infectivity of waterborne viable but nonculturable *Helicobacter pylori* strain SS1 in mice. *Helicobacter*. DOI: 10.1111/hel.12391.

Presentations

Poster Presentation

- > Brewster, R. 2013. Chinese Involvement and Accidents and Injuries in Small-Scale Gold Mining in Ghana. Poster presentation at the University of Michigan's Undergraduate Research Opportunities Program Symposium.

Published Abstracts

- > Yang, L., R. Brewster, M. Hoang and R. Novick. Exposure Assessment of Milk Protein in Non-Dairy or Vegan Ice Cream Substitutes – Are Non-Dairy or Vegan Products Safe to Populations with Milk Allergy? Society of Toxicology, March 10-14, 2019. Baltimore, MD.