Lauren Brown, M.S., DABT

DIRECTOR
MANAGING SCIENTIST

CONTACT INFORMATION

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PROFESSIONAL PROFILE

Ms. Lauren Brown is a board-certified toxicologist in ToxStrategies' Health Sciences Practice. She has more than 15 years of professional experience, including implementing risk assessments, developing toxicological reference values, evaluating toxicological studies, performing systematic literature reviews, carrying out risk characterization and conducting scientific analysis. In her career, Ms. Brown has worked with a diverse client base, including government (federal and state), private sector, and non-governmental organizations. At ToxStrategies, her work revolves around providing clients with toxicological support related to safety assessment, sustainable toxicology, alternatives assessment, toxicity testing, and protocol development. Prior to joining ToxStrategies, she managed a large volume of technical consulting work related to human health hazard and risk assessment. This work spanned multiple contracts and federal agencies, including the US EPA and the Agency for Toxic Substances and Disease Registry (ATSDR).

Ms. Brown has provided technical support to clients for all aspects of risk assessment, including hazard characterization, exposure assessment, dose-response analyses, and risk characterization. Her experience includes conducting safety assessments for a variety of compounds considering exposure from both consumer products and the environment. For example, Ms. Brown provided project management and technical expertise in the derivation of more than 150 human health and ecologic water quality thresholds for the Texas Commission on Environmental Quality.

Ms. Brown earned her Master of Science in Environmental Health from the T.H. Chan School of Public Health at Harvard in 2010. She has presented at multiple scientific conferences, including the Society for Risk Analysis, the Society of Toxicology, and the Toxicology and Risk Assessment Conference, and she was named a Diplomate of the American Board of Toxicology in 2019. She has also been an invited reviewer for the journals *Regulatory Toxicology and Pharmacology*, *Toxicology Reports* and *Environmental Research*. In addition, she is a full member of the Society of Toxicology, and in 2025, is the past President of the Sustainable Chemicals through Contemporary Toxicology specialty section.

EDUCATION, DEGREES EARNED, AND CERTIFICATIONS

2019 Diplomate of the American Board of Toxicology (Recertification 2024)

2010 M.S., Environmental Health, Harvard T.H. Chan School of Public Health

2005 B.A., Zoology and Environmental Science, Miami University, Ohio (*cum laude*, Phi Beta Kappa)

SELECTED CONTINUING EDUCATION COURSES

2025 Physiologically Based Kinetic Modeling Made Simple: A Nonprogrammer's Guide to Chemical Risk Assessment. Orlando, Florida. Society of Toxicology. Hosted by Biological Modeling Specialty Section

2024 Putting Theory into Practice: Using Computational New Approach Methodologies in Next-Generation Risk Assessment. Salt Lake City, Utah. Society of Toxicology. Hosted by Computational Toxicology Specialty Section.

2023 Tools Supporting Open Chemical Evaluations. Nashville, TN. Society of Toxicology. Hosted by Regulatory and Safety Evaluation Specialty Section.

2022 Safety Assessment of Cosmetics in the EU. Online. Hosted by Vrije Universiteit Brussel. Moderator: Dr. Vera Rogiers

2022 Animal-Free Safety Assessment of Consumer Products and Ingredients: A Primer. San Diego, CA. Society of Toxicology. Hosted by *In vitro* and Alternative Methods Specialty Section of the Society of Toxicology

2022 Principles and Applications of Read-Across in Human Health Risk Assessment. San Diego, CA. Society of Toxicology. Hosted by the Regulatory and Safety Evaluation Specialty Section

2019 Mid-America Toxicology Course. Kansas City, MO. Moderator: Dr. Curtis Klassen

PROFESSIONAL MEMBERSHIPS

2020–present Society of Toxicology
Sustainable Chemistry for Contemporary Toxicology Specialty Section, Past President (2025-2026)
Risk Assessment Specialty Section, Member

2019–present American Board of Toxicology

2019–2025 Association for the Advancement of Alternatives Assessment, Executive Council Member (2022–2025)

SELECTED PROFESSIONAL EXPERIENCE

Toxicology and Risk Assessment

Directed a project related to developing more than 150 human health and ecologic water quality thresholds to support permitting activities related to produced water for the state of Texas. Provided technical expertise an input

related to derivation of human health-based threshold and quality assurance of all deliverables provided to the client. Followed state of Texas guidelines and implementation procedures for supporting human health and environmental risk assessment.

Support the development of no significant risk levels (NSRLs) for ingredients or contaminants in consumer products which do not pose a risk to human health. To develop NSRLs literature reviews were done to identify critical effects and key studies. Dose-response modeling was conducted and guidance provided by the state of California was used to convert reference doses and cancer slope factors to NSRLs.

Directed a project to oversee the development of toxicological profiles for 13 different chemicals for ATSDR. Managed a team of 10 scientists to assess chemical hazard, develop minimum risk levels (MRL), and summarize the information in comprehensive reports for public consumption. Implemented all aspects of systematic reviews for several chemicals, including scoping, literature screening, study quality evaluations, and weight-of-evidence hazard characterization. To develop MRLs, used multiple methods that included dose-response modeling (using EPA's Benchmark Dose Software) and the more traditional NOAEL/LOAEL approach with uncertainty factors, depending on data availability.

Collaborated with scientists at ATSDR to develop a method to standardize public health assessments at contaminated sites. Worked with ATSDR toxicologists in developing a process to distill data presented in toxicological profiles for efficient interpretation. Using established risk values, along with the data used to derive them, categorized ranges of exposure into no risk, approaching risk, likely risk, and definitive risk. Also proposed values associated with these ranges for several contaminants, including benzene, trichloroethylene, and chromium VI.

Managed a project to develop and implement a novel approach to setting a maximum contaminant level for perchlorate in drinking water. Reviewed the epidemiologic literature, evaluated study quality, and developed dose-response functions to evaluate adverse health outcomes associated with alterations in thyroid hormone levels, along with characterizing the uncertainties in the analysis and developing a report for peer review. Ultimately, several toxicological reference values were derived for the Agency to consider in the context of their regulatory determination process.

Managed the technical analysis for the US EPA's assessment of a household action level for lead in drinking water. Developed lead exposure profiles, quantified shifts in distributions of blood lead levels for given changes in water lead levels, and described the connection between blood lead levels and adverse health outcomes. Using these multiple approaches, derived toxicological reference values for the Agency to consider in the context of their regulatory rule-making process.

Served as project director for a team of scientists researching data gaps related to PFAS exposure and immune outcomes. Conducted literature reviews, including epidemiological and toxicological literature. Identified data gaps and cross-walked them to the data collected in the National Health and Nutrition Survey (NHANES) to determine whether any gaps could be filled with novel statistical analysis of that data set.

Developed a dose-response relationship between adult lead exposure and risk of cardiovascular disease mortality using a rigorous weight-of-evidence evaluation of existing epidemiological literature. Created a report that was peer reviewed and well received by experts in lead and risk assessment. Published work in *Environmental Health Perspectives.*

Non-Animal Methods and Next Generation Risk Assessment

Direct the development of best practice guidance documents related to evaluating consumer risk with non-animal methods. Provide subject matter expertise on implementation of new approach methods to assess skin sensitization, eye irritation and skin irritation using state-of-the science methods. Develop easy to follow work

flows to support a safety assessor in hazard assessment, GHS classification and risk assessment. Implement case studies following the guidance.

Develop a case study to educate a federal agency on a proposed approach to integrate existing animal, *in vitro*, and *in silico* models to support decisions making related to systemic toxicity with the use of additional animal studies. Collate diverse data streams into a weight of evidence argument support systemic safety for a non-technical audience.

Support clients in exploring approaches for next generation risk assessment. This includes conducting threshold of toxicological concern assessments, proposing additional *in vitro* testing strategies and *in silico* analyses to fill data gaps. Develop written documentation on scientific support for the proposed approaches.

Personal Care Products and Cosmetics

Oversees ToxStrategies' work in the personal care and cosmetics space. Regularly provides support for cosmetics brands by providing screening level and comprehensive safety assessments for a variety of cosmetics ingredients, including polymers, botanicals, steroids, and other synthetic chemicals. Assessments have been done for ingredients in both leave-on and rinse-off products. Provides guidance to clients on approaching safety assessment for novel ingredients using non-animal methods.

Developed protocols for the US FDA to conduct cosmetic safety assessments and aggregate exposure assessment. The protocols provide a step-by-step process outlining data sources, mathematical approaches, and risk characterization strategies for site of contact, sensitization, phototoxicity, and systemic endpoints. The protocols include details on considerations which are needed for potentially sensitive populations, nanomaterials, and botanical ingredient assessment. The protocols were developed using the best available science, including guidance from SCCS, IFRA, CIR, RIFM, ASEAN, and FDA, and subject-matter experts in the field.

Provide support to a large cosmetics brand in developing SOPs for situations when it is appropriate to bridge data from already-conducted tests. The work involves reviewing company internal procedures, interviewing knowledgeable staff on current processes, and providing a recommended framework to improve testing approaches.

Chemical Hazard and Alternatives Assessment

More than a decade of experience conducting chemical hazard and alternatives assessments. Led ToxStrategies' efforts to become ChemForward verified; currently serves as the project manager for ToxStrategies' work with ChemForward.

Using alternatives assessment–based methods—including from the EPA's Design for the Environment program, GreenScreen®, and Washington State's Quick Chemical Assessment Tool—developed and implemented a novel approach to efficiently rank more than 40 chemical solvents by hazard that are listed on the Toxics Release Inventory. Presented work at multiple conferences.

Regularly accesses the EPA Chemical Hazard Comparison dashboard and 3E Exchange to support client requests, to prioritize hazards assessments for endpoints of most interest for a given compound, and to assist in internal quality assurance of hazard assessment work products. Trains staff internally on use of these tools.

Oversaw the development of EPA's Alternatives Assessment for decabromodiphenyl ether (DecaBDE). Compiled a >800-page report and developed chapters on chemical uses, production, and exposure potential.

Participated in case studies for identifying alternatives to copper anti-fouling boat pain to test the original Interstate Chemical Clearinghouse (IC2) Alternatives Assessment Guide (a project funded by Washington state).

PEER-REVIEWER

Regulatory Toxicology and Pharmacology

Toxicology Reports

Environmental Research

PEER-REVIEWED PUBLICATIONS

Doepker C, Franzen A, Brorby G, **Brown L**, Choski N, East A, Wikoff D. 2025. Smoke flavoring – A case study demonstrating the value of using benefit-risk analysis for foods (BRAFO) to provide transparency for risk management decisions. Manuscript submitted for publication to *Regul Toxicol Pharmacol*

Rudisill C, Jacobs M, Roy M, **Brown L**, Eaton R, Malloy T, Davies H, Tickner J. 2024. The use of alternatives assessment in chemicals management policies: Needs for greater impact. Integr Environ Assess Manag 20(4):1035–1045; doi: 10.1002/ieam.4826.

Brown L, Lynch M, Belova A, Klein R, Chiger A. 2020. Developing a health impact model for adult lead exposure and cardiovascular disease mortality. Environ Health Persp 128(9):097005; doi: 10.1289/EHP6552.

PUBLISHED REPORTS

International Collaboration on Cosmetic Safety. 2025. Best Practice Guidance Document. Skin Sensitization Assessment: Using New Approach Methods for Substances in Cosmetics and Personal Care Products. v1.0. Prepared by Neepa Choski and Lauren Brown (ToxStrategies, LLC) https://www.iccs-cosmetics.org/education/best-practice-guidance/bpg-skin-sensitization-assessment-using-new-approach-methods

ToxStrategies, LLC through Contract with the U.S. FDA. 2022. US FDA Protocol for Cosmetic Ingredient Risk Assessment. [For Internal Use Only]

ToxStrategies LLC through Contract with the U.S. FDA. 2023. US FDA Protocol for Aggregate Exposure Assessment of Ingredients Used in Cosmetic Products. [For Internal Use Only]

Buser M, Roney N, Antezana A, Derrick H, Chiger A, **Brown L**, Beins K. (Chemical Manager Team). 2022. Toxicological profile for disulfoton. (Draft for public comment). Agency for Toxic Substances and Disease Registry. https://www.atsdr.cdc.gov/ToxProfiles/tp65-p.pdf

Keith S, Alman B, **Brown L**, Beins K, Derrick H, Diskin K, Chiger A, Juergens M, Lynch M. (Chemical Manager Team). 2022. Toxicological profile for chloromethane. (Draft for public comment). Agency for Toxic Substances and Disease Registry. https://www.atsdr.cdc.gov/ToxProfiles/tp106.pdf.

Pohl H, Buser M,… **Brown L**, et al. (Chemical Manager Team). 2022. Toxicological profile for glyphosate. Final Draft. Agency for Toxic Substances and Disease Registry. https://www.atsdr.cdc.gov/ToxProfiles/tp214.pdf

Williams M, Przybyla J, Keith S, **Brown L**, et al. (Chemical Manager Team). 2022. Toxicological profile for nitrobenzene (Draft for public comment). Agency for Toxic Substances and Disease Registry, https://www.atsdr.cdc.gov/ToxProfiles/tp140-p.pdf.

POSTERS AND PRESENTATIONS

Brown L, Wikoff D. Building your evidence base: approaches and tools for identification, selection, evaluation and assembly of existing data for ingredient safety. Personal Care Products Council Science Symposium, Arlington, VA, October 2025.

Brown L. Integrating new approach methodologies to inform sustainable chemical decisions. Abstract 1156, Society of Toxicology 64th Annual Meeting, Orlando, FL, March 2025.

Brown L. Safety substantiation of complex cosmetic ingredients – Considerations and approaches to comply with MoCRA. Society of Toxicology 63rd Annual Meeting, Salt Lake City, UT, March 2024.

Brown L, Norman K. The modernization of cosmetics regulation act and confirming cosmetic safety. Webinar presentation hosted by the Regulatory and Safety Evaluation Specialty Section, December 2023.

Brown L, Katz L, Sullivan K, Cuevas A. Evaluating and confirming safety in the context of the modernization of Cosmetics Regulation Act. ToxForum Summer Meeting, Arlington, VA, July 2023.

Brown L, McMillan DA, Urban JD, Mihalchik AL. A tiered approach for assessing the safety of polymeric ingredients in cosmetics and personal care products. Poster presented at Society of Toxicology 62nd Annual Meeting, Nashville, TN, March 2023.

Whitaker M, **Brown L**. Safer chemical tools and practices: Successes in advancing safer chemical selection on a global scale. Co-Chair. Society of Toxicology 61st Annual Meeting, San Diego, CA, 2022.

Brown L, Klein R. Understanding the relationship between maternal thyroid hormones and neurodevelopmental outcomes. Poster presented at International Society for Environmental Epidemiology, virtual, 2021.

Brown L, Forth H, Reichle L, Casner AJ, McFadden A. Using alternatives assessment approaches to inform the ranking of TRI-listed solvent chemicals. Poster presented at Society for Risk Analysis, Arlington, VA, 2019.

Branch F, Pfahles-Hutchens A, **Brown L,** Chiger A, Rajan P, Hubbard H, Melia J, Riley K. Data quality evaluation for epidemiologic studies under amended TSCA. Poster presented at the International Society for Environmental Epidemiology/International Society for Environmental Exposure, Ottawa, CA, 2018.

Lynch M, **Brown L,** Chiger A. Case studies for neurotoxic chemicals. Presentation to Society for Risk Analysis, San Diego, CA, 2017.

Brown L, Pepping T, He K. Understanding the relationship between alterations in thyroid hormone levels and subsequent neurodevelopmental impacts. Poster presented at Society of Toxicology 55th Annual Meeting, New Orleans, LA, 2016.

Brown L, Connor E. Managing chemical risk through alternatives assessments: Case studies and current initiatives. Presentation to Society for Risk Analysis, Denver, CO, 2014.

Brown L, Lynch M, Post E, Belova A. Determine a concentration response relationship suitable for estimating adult benefits of reduced lead exposure. Presentation to Society for Risk Analysis, Baltimore, MD, 2013.

Belova A, Narayan T, **Brown L,** Haskell J, Bozeman S, Lamb J. A framework to assess aflatoxin public health impacts in developing countries with application to Nigeria and Tanzania. Presentation to Society for Risk Analysis, Baltimore, MD, 2013.

Lynch M, **Brown L,** Chun A, Reid J, Russel P. Risk communication for the Toxic Release Inventory. Poster presentation to Society for Risk Analysis, 2012.