



Exponent®
Engineering & Scientific Consulting

Kristine Tucker, M.D., M.S., FACEP

Principal Scientist | Health Sciences
Bellevue
+1-425-519-8799 | tuckerk@exponent.com

Professional Profile

Kristine Tucker, M.D., M.S., FACEP, is a physician and toxicologist with expertise in clinical medicine, disease and injury causation, chemical exposures and risk, and medical and emergency healthcare. She specializes in medical-legal consulting, toxic exposure evaluation, and drug, biological, and chemical toxicity assessment across healthcare, legal, and regulatory contexts.

Dr. Tucker brings a rare dual background as a board-certified emergency medicine physician and trained toxicologist, with clinical and consulting experience spanning nearly three decades. She serves clients across the healthcare, legal, and regulatory sectors and has provided expert analysis across a wide range of clinical medicine and toxicological issues, with particular expertise in disease and injury causation assessment, pharmaceutical and illicit drug and chemical toxicity, viral and bacterial infectious disease and risk evaluation for environmental and occupational exposures. Examples of specific projects include mold and mycotoxin exposure, methanol and alcohol toxicity, foodborne illness and infectious disease, and trauma related injuries and treatments.

Dr. Tucker's consulting experience spans weight-of-evidence assessments, human health risk evaluations, and the intersection of clinical emergency medicine and toxicological science. Her approach integrates clinical emergency medicine expertise, toxicological risk assessment methodologies, and weight-of-evidence analysis to deliver rigorous, scientifically defensible conclusions.

Dr. Tucker is a Diplomate of the American Board of Emergency Medicine and a Fellow of the American College of Emergency Physicians (FACEP). She holds a Florida Department of Health Medical Doctor Expert Witness Certificate. She also maintains active medical licensure in Washington State and Maine and holds current certifications in ATLS, ACLS, PALS, and BLS, including prior instructor-level credentials. Dr. Tucker earned her Doctor of Medicine from the Medical College of Wisconsin, her Master of Science in Toxicology from the University of Washington, and her Bachelor of Science in Premedicine and Biology from Ball State University.

Dr. Tucker is an active contributor to the American College of Emergency Physicians, the Society of Toxicology, and the American College of Medical Toxicology, among other professional organizations. She has co-authored peer-reviewed publications and presented research at the Society of Toxicology Annual Conference on topics including postmortem THC blood level prediction, mycotoxin risk assessment, and developmental and reproductive toxicity. She has also served as a volunteer emergency physician and ski patrol medical associate and instructor, reflecting a sustained commitment to community health and medical education.

Academic Credentials & Professional Honors

M.D., Medicine, Medical College of Wisconsin, 2004

M.S., Toxicology, University of Washington, 1995

B.S., Premedicine/Biology, Ball State University, 1993

Community Faculty Teacher of the Year Award, Swedish Cherry Hill Family Medicine Residency, 2014

Fellow of the American College of Emergency Physicians (FACEP), American College of Emergency Physicians, 2010

Emergency Medicine Foundation/ACEP Teaching Fellow, Emergency Medicine Foundation/American College of Emergency Physicians, 2010

Department of the Army Commander's Award for Public Service, U.S. Department of the Army, 2007

Chief Resident, UW/MAMC Affiliated Emergency Medicine Residency Program, University of Washington / Madigan Army Medical Center, 2006-2007

Amy Hunter-Wilson Native American Health Scholar, 2001, 2002

MCW Presidential Scholar, Medical College of Wisconsin, 2000-2004

American Indian Graduate Center Fellow, American Indian Graduate Center, 2000-2004

Washington State Higher Education Coordinating Board Health Professional Scholar, Washington State Higher Education Coordinating Board, 2000-2004

Sault Ste. Marie Tribe of Chippewa Indians Scholar, Sault Ste. Marie Tribe of Chippewa Indians, 2000-2001

John R. and Aline B. Emens Scholar, Ball State University, 1989-1993

Ball State Presidential Scholar of Academic Distinction, Ball State University, 1989-1993

Graduated Cum Laude, Ball State University Honor's College, 1993

Academic Appointments

Clinical Appointment, Division of Emergency Medicine, Department of Medicine, University of Washington Medical Center, 2014-2020

Acting Instructor of Medicine, Division of Emergency Medicine, Department of Medicine, University of Washington Medical Center, 2010-2011

Clinical Instructor of Medicine, Division of Emergency Medicine, Department of Medicine, University of Washington Medical Center, 2009-2010

Core Faculty Physician & Toxicology Instructor, Madigan Army Emergency Medicine Residency Program, Madigan Medical Center, 2008-2010

Prior Experience

Physician Consultant, J.S. Held, Redmond, WA, 2023-2026

Emergency Medicine Physician, Eastside Emergency Physicians/Swedish Medical Center, Issaquah, WA, 2019-2024

Emergency Medicine Locums Physician, Maine General/CompHealth, Inc., Augusta, ME, 2019

Emergency Medicine Physician, Lincoln Health/Maine Medical Partners, Damariscotta, ME, 2018-2019

Emergency Medicine Physician, Washington Permanente Medical Group, Seattle, WA, 2017-2018

Emergency Medicine Locums Physician, Asante / CompHealth, Inc., OR, 2015-2018

Emergency Medicine Physician, Seattle Emergency Physicians Services/Swedish Medical Center, Seattle, WA, 2014-2018

Consulting Physician and Toxicologist, Veritox, Inc., Redmond, WA, 2014-2018

Emergency Medicine Physician, Swedish Medical Group/Center – Cherry Hill Emergency Department, Seattle, WA, 2011-2014

Emergency Medicine Physician, Highline Emergency Physicians/Highline Medical Center, Burien, WA, 2007-2009

Chief Resident Physician, Emergency Medicine Residency Program, University of Washington/Madigan Army Medical Center, Seattle, WA, 2006-2007

Resident Physician, Emergency Medicine Residency Program, University of Washington/Madigan Army Medical Center, Seattle, WA, 2005-2006

Resident Physician/Lifeflight Physician, Emergency Medicine Residency Program, University of Massachusetts Medical Center, Worcester, MA, 2004-2005

Consulting Toxicologist, GlobalTox, Inc., Redmond, WA, 1998-2000

Staff Toxicologist, Golder Associates, Inc., Redmond, WA, 1995-1998

Graduate Student Research Assistant, Department of Environmental Health, University of Washington, Seattle, WA, 1993-1995

Professional Affiliations

American College of Emergency Physicians

Washington American College of Emergency Physicians

Society of Toxicology

American College of Medical Toxicology

Washington State Medical Association

Emergency Medicine Residents Association

Society for Academic Emergency Medicine

Pacific Northwest Association of Toxicologists

American Industrial Hygiene Association

Publications

Chan, C, Tucker, K, and Kelman, B. 2025. Weight of Evidence Assessment for N-Nitroso-Folic Acid and Developmental and Reproductive Toxicity. *The Toxicologist*, 204(1):502.

Tracy, E, Chan, C, Tucker, K, and Kelman, B. 2025. Weight of Evidence Assessment for Adverse Respiratory Effects Following Inhalation Exposure to Ethylene Glycol. *The Toxicologist*, 204(1):682.

Kelman, BJ, Tucker, KA, Chan, CY, and Moore NH. Weight-of-Evidence Assessment of the Ability of Postmortem (PM) Measurements of Δ -9-tetrahydrocannabinol (THC) in Blood to Predict Antemortem (AM) Blood Levels. Presented at the Society of Toxicology Conference, Baltimore, Maryland, March 10-14, 2019.

Chan, C, Tucker, K, Moore, N and Kelman, B. 2018. Risk from Mycotoxins in Mold-Infested Consumer Products. *The Toxicologist*, 162(1):342.

Deyo, JA, Tucker, KA, Chan, CY, Moore, NH, and Kelman, BJ. Marijuana: The Smoke Hasn't Cleared, Abstract No. 1282 in *The Toxicologist – Supplement to Toxicological Sciences*, Volume 156, Issue 1, March 2017. Presented at the Society of Toxicology Conference Baltimore, Maryland, March 12-16, 2017.

Bangale, A, Kalbfleisch, KA. 2010. A Traveler Caught in the "Thick" of Things. *Academic Emergency Medicine*, November 2010, Volume 17, Issue 11, pages e141–e148.

Rosenberry, C, Stone, F, Kalbfleisch, KA. 2009. "[Rhabdomyolysis-induced severe hyperkalemia](#)," *Western Journal of Emergency Medicine*. 10:4.

Givens, M, Kalbfleisch, KA, Bryson, S. 2008. "[Comparison of methanol exposure routes reported to Texas Poison Control Centers](#)," *Western Journal of Emergency Medicine*. Vol. 9: No. 3, Article 5.

Presentations

CPC Case Competition Presentation: "I Once Owned a Farm in Africa..." Society of Academic Emergency Medicine Annual Conference. New Orleans, Louisiana. May 13, 2009.

Oral Research Presentation: Inhalation of methanol containing products – a significant source of possible toxicity. Madigan Army Medical Center Research Day. Fort Lewis, Washington. April 27, 2007.

Master's Thesis: Discrimination and concept learning in infant *Macaca fascicularis* exposed in utero to methanol. Department of Environmental Health, University of Washington. Seattle, Washington. May 1995.

Honor's Thesis: Presentation of results for the identification and monitoring of the pesticide, Dimilin, via high-pressure liquid chromatography. Sigma Zeta National Math and Science Conference. St. Joseph's College, Philadelphia, Pennsylvania. March 1993.

Posters

Stock, A, Wang, J, Chan, C, Tucker, K and Kelman, B. Weight of Evidence Assessment for Toxicities from Retained Lead Pellet. Presented at the Society of Toxicology Conference, San Diego, California, March 21-26, 2026.

Chan, C, Tucker, K, and Kelman, B. 2025. Weight of Evidence Assessment for N-Nitroso-Folic Acid and Developmental and Reproductive Toxicity. *The Toxicologist*, 204(1):502.

Tracy, E, Chan, C, Tucker, K, and Kelman, B. 2025. Weight of Evidence Assessment for Adverse Respiratory Effects Following Inhalation Exposure to Ethylene Glycol. *The Toxicologist*, 204(1):682.

Kelman, BJ, Tucker, KA, Chan, CY, and Moore, NH. Weight-of-Evidence Assessment of the Ability of Postmortem (PM) Measurements of Δ -9-tetrahydrocannabinol (THC) in Blood to Predict Antemortem (AM) Blood Levels. Presented at the Society of Toxicology Conference, Baltimore, Maryland, March 10-14, 2019.

Chan, C, Tucker, K, Moore, N and Kelman, B. 2018. Risk from Mycotoxins in Mold-Infested Consumer Products. *The Toxicologist*, 162(1):342.

Deyo, JA, Tucker, KA, Chan, CY, Moore, NH, and Kelman, BJ. Marijuana: The Smoke Hasn't Cleared, Abstract No. 1282 in *The Toxicologist – Supplement to Toxicological Sciences*, Volume 156, Issue 1, March 2017. Presented at the Society of Toxicology Conference Baltimore, Maryland, March 12-16, 2017.

Givens, M, Kalbfleisch, KA, Bryson, S. Inhalation of methanol containing products – a significant source of possible toxicity. American College of Emergency Physicians Annual Meeting, New Orleans, Louisiana, October 2006.

Swenson, LJ, Kalbfleisch, KA. Development of 'the moving box model' to quantitate occupational inhalation exposure from an overhead spray irrigation system. American Industrial Hygiene Association Annual Meeting, April 2000.

Kelman, BJ, Swenson, LJ, Uppala, LV, Kalbfleisch, KA, and Mueller, WF. A preliminary calculation of health risk associated with the use of insulation made from shredded paper. Society of Toxicology Annual Meeting, April 1998.

Project Experience

Emergency Medicine & Clinical Toxicology – Disease and Injury Causation and Treatment

- Performs medical record review and analysis for various medical issues including environmental and occupational exposures, injury/trauma, pharmaceutical exposures, infectious disease and foodborne illness.
- Evaluates injury or disease causation.
- Provides assessment of infectious diseases and foodborne illness.
- Analyzes potential adverse health effects associated with polypharmacy and drugs of abuse.

Cannabis, Drug & Postmortem Toxicology

- Investigated the toxicological implications of cannabis use across clinical and legal contexts; synthesized emerging scientific evidence on marijuana pharmacology and exposure assessment to support medico-legal consulting and expert analysis.
- Applied forensic toxicological principles to evaluate THC postmortem drug levels and their relationship to antemortem exposure.
- Assessed drug and medication-related adverse events in emergency medicine and consulting contexts; integrated clinical pharmacology and toxicological expertise to determine causation and inform patient management and legal review.

- Evaluated patients' poly-pharmaceutical and/or co-exposure to pharmaceutical and illicit drugs to determine possible drug-drug interactions and implications in adverse reactions and health effects.

Toxicology Consulting & Human Health Risk Assessment

- Conducted weight-of-evidence assessments evaluating developmental and reproductive toxicity risks associated with N-Nitroso-Folic Acid; synthesized scientific literature and toxicological data to deliver defensible, evidence-based risk conclusions for regulatory and legal contexts.
- Evaluated adverse respiratory effects following inhalation exposure to ethylene glycol; applied weight-of-evidence methodology to assess exposure risk and inform health-protective conclusions.
- Assessed health risks associated with mycotoxin exposure from mold-infested consumer products; analyzed toxicological evidence to characterize risk levels and support litigation and regulatory determinations.
- Conducted a weight-of-evidence analysis of postmortem THC blood measurements to evaluate their ability to predict antemortem blood levels; provided scientifically rigorous findings relevant to legal, forensic, and public health applications.
- Performed a weight-of-evidence assessment for toxicities associated with retained lead pellets; integrated clinical and toxicological data to characterize health risks and support medico-legal determinations.
- Analyzed methanol exposure routes reported to regional poison control centers; identified inhalation of methanol-containing products as a significant and underrecognized source of potential toxicity, informing clinical and public health guidance.
- Developed a quantitative model to assess occupational inhalation exposure from overhead spray irrigation systems; delivered exposure estimates to support workplace health and safety evaluations.
- Evaluated preliminary health risks associated with insulation materials manufactured from shredded paper; applied toxicological risk assessment frameworks to characterize potential exposure hazards.

Additional Experience

- Served as a physician evaluator for a regional paramedic and emergency medical services training program; assessed clinical competency and supported the development of pre-hospital emergency care providers over a multi-year period.
- Participated as an emergency physician member of a public health initiative focused on ending the HIV epidemic; represented a regional emergency department in a collaborative multi-stakeholder effort to improve community health outcomes.

Additional Education & Training

Advanced Trauma Life Support (ATLS), American College of Surgeons

Advanced Cardiovascular Life Support (ACLS), American Heart Association

Advanced Cardiovascular Life Support (ACLS) — Instructor, American Heart Association

Pediatric Advanced Life Support (PALS), American Heart Association

Pediatric Advanced Life Support (PALS) — Instructor, American Heart Association

Advanced Wilderness Life Support (AWLS), Wilderness Medical Associates

Advanced Wilderness Life Support (AWLS) — Instructor, Wilderness Medical Associates

Basic Life Support (BLS), American Heart Association