

Richard Troast, Ph.D.
Troast Environmental Consulting, LLC
Email: Richard@troastenvirotox.com
115 Winchester Lane Locust Grove, VA. 22508
Phone: (540) 972-5967

PROFESSIONAL EXPERIENCE

Scientific Consulting Services, March 2005 – Present

2008-2017. Dr. Troast created Troast Environmental Consulting (TEC), LLC in 2008. He works independently and has available a cadre of associates formerly the USEPA, to provide a complete environmental assessment focusing on hazardous wastes, site remediation, lead, asbestos, mold, and waste water issues. Dr. Troast and associates provide litigation services that include assessment of chemical and environmental hazards, expert opinion reports and testimony. Dr. Troast has provided expert opinions for establishing the hazards and risks of exposure to lead and other environmentally toxic metals such as arsenic in adults and children, the contaminants in coal ash, asbestos toxicity, radon exposure, PCB contamination, diesel, benzene, and indoor air contaminants from chemical and microbial sources.

2009-10. Dr. Troast served as Program Director and environmental scientist for Jobe Consulting Group. Dr. Troast served as senior toxicologist for the reviews.

2005-2008. Dr. Troast was senior scientist and regulatory affairs specialist on USAID contract No. GS-10F-0112K (Jordan Industrial Manifest Program) assisting leaders of the Ministry of the Environment and other Ministries within the Kingdom of Jordan in assessing the movement of hazardous waste within the Kingdom, researching methods for the destruction of hazardous waste, designing a reportable quantities system for tracking hazardous waste, and designing analytical laboratory practices and a GLP manual for the Royal Scientific Society (RSS) of Jordan to use in providing oversight for the Ministry of the Environment (MOEnv). Dr. Troast was the representative for the project and reported directly to the Ministerial working group and to the leadership of the RSS when critical junctures were reached. His reports incorporated three major influences of international hazardous materials control, the European Union standards, the WHO guidance principals and the US EPA rules affecting hazardous materials transfer, disposition and safety while maintaining harmony with appropriate ISO 14000 guidance documents. Dr. Troast provided outreach assistance as needed and helped develop working models of critical agreements to facilitate the transfer of information between Ministries charged with the control of hazardous waste within the Kingdom.

2005-2007. Dr. Troast served as a consulting scientist/toxicologist with the Syracuse Research Corp. located in Syracuse, New York. This was a part-time position to assist in developing new avenues for review of toxicology studies in light of changes in testing protocols.

Teaching

Lord Fairfax Community College (Warrenton, VA) and Germanna Community College (Fredericksburg, VA)

- Adjunct Professor in Biology and Environmental Science, January 2005 - Dec 2012
- Taught courses in Environmental Science, Anatomy and Physiology, and Biology.

George Mason University, Manassas, VA

- Guest Lecturer for Genomics and Bioinformatics, January 2004 - May 2007

US Environmental Protection Agency, Office of Emergency and Remedial Response (OERR), Washington, DC, 1990 - 2005 (retirement)

Dr. Troast was a senior scientist for the Remedial cleanup (Superfund) program. He chaired the Technical Review Workgroup for Lead and the Technical Review Workgroup for Asbestos. During his tenure as Chairman, he organized and chaired several national meetings which brought together Federal and State agencies to discuss lead and asbestos toxicity and exposure characteristics. Dr. Troast was responsible for and participated in the preparation of guidance documents on risk and exposure characteristics of lead and asbestos released during years 1999-2005.

Dr. Troast was responsible for the release of the first IEUBK model suitable for use by a Windows[™] based operating system. He was a task manager to a multi-contractor team of who were re-writing the IEUBK code from DOS into Windows. He was responsible for the accuracy of the model and the input modules and the output for lead in *air, drinking water, diet, soil and dust, bioavailability* and the geometric standard deviation (GSD). Dr. Troast also participated in the development of the Adult Lead Model which is used for estimating body burden of lead in adults. Dr. Troast was also part of a team developing *in vitro* methods for establishing exposure parameters for metals including lead. This review was completed post-retirement and published outside of EPA.

Dr. Troast was responsible for the interagency coordination for and oversight of Superfund and hazardous waste activities that crossed over to other program responsibilities, including hazardous wastes under RCRA, chemical testing and controls under TSCA, and water safety under the SDWA and other legislation. Dr. Troast participated in laboratory accreditations to insure that laboratories followed required protocols under laboratory accreditation guidelines.

During his tenure at EPA Dr. Troast was a member of the Genomic Taskforce and the Regulatory Workgroup and assisted in developing regulatory guidance for interpreting genomic-based toxicological data and had these data published and adopted by EPA.

From 2001 to 2005, Dr. Troast was a member of the ILSI Health and Environmental Sciences Institute (HESI) work group. This group, comprised of leading industry and Federal scientists, worked on harmonizing *in vitro* and *in vivo* scientific study requirements among agencies.

US Environmental Protection Agency, Office of Pesticides and Toxic Substances, Chemical Testing Branch (TSCA), Washington, DC, 1980 - 1989

As branch and section leader Dr. Troast had oversight for the analysis of chemical and toxicological data supplied by industry using the authorities of TSCA sections 4, 5 and 8 to determine whether further data was required to fully understand and characterize the potential toxicity of chemicals that were potentially released via industrial processes to near-by populations. His involvement was direct and hands on and was instrumental in providing human health and environmental assessments of many toxic and high production/ high exposure chemicals. These assessments lead to the chemical industry updating their data files using approved test methods for oral, dermal and inhalation routes of chemical exposure including the

use of current good laboratory practices and QA/QC requirements. The assessment process was designed to bring data files up to the standards of the Toxic Substances Control Act as well as International Chemical testing required by OECD. Chemical testing programs were reviewed, tracked and managed according to the rule that was published requiring that affected industries to develop the data. Dr. Troast's group analyzed all industry studies and made recommendations further scientific studies based on reviews of the originally submitted studies.

Dr. Troast was offered a temporary assignment to the EPA Office of Air and Radiation in 1988 to assist in establishing a risk assessment protocol for indoor radon exposure. Dr. Troast participated in reviews of several methodologies for risk assessments in confined indoor situations which resulted in the establishment of a practical risk methodology used for calculating the risks from breathing radon gas within a residence.

Legislative Fellow, 1987 - 1988

Dr. Troast was selected by the US Office of Personnel Management to serve as a LEGIS Fellow for the second session of the 97th Congress. In this capacity Dr Troast served with Senator Gordon Humphrey (R-NH) as a legislative aide focusing on environmental legislation pending before the US Senate. Significant legislative actions included Amendments of the Clean Air Act, The Clean Water Act, Toxic Air Pollutants, Asbestos in Schools, and Radon. Dr. Troast also provided an assessment to the EPA Office of Water on the health of local community wells in New Hampshire polluted by radioactive gas from the State's granite base rock in support of EPA grants to the state.

US Environmental Protection Agency, Office of Pesticide Programs (FIFRA), Washington, DC, 1973 - 1980

Dr. Troast was a toxicologist/microbiologist and risk assessor for two departments within the Office off Pesticides. His initial assignment was in the Registration Division which initially assessed chemicals for toxicity and safety, and later in the Special Registration Division where Dr. Troast was the manager of reviews for hazardous pesticides where the data files were inadequate.

EDUCATION

- Bachelor of Arts in Biology, West Virginia University, 1969
- Master of Science in Microbial Biochemistry, West Virginia University, 1972
- Ph.D. in Environmental Science and Public Policy, George Mason University, 2006

Dissertation Title: "The Effect of Environmental Lead and Identification of Biomarkers as Signals of Cellular Toxicity Using Genomic Tools in *Caenorhabditis elegans*- A Study in Science and Policy." Study emphasis in genomic toxicology and bioinformatics.

PROFESSIONAL TRAINING

- Executive Development Seminar in Science Technology and Public Policy, US OPM 1992
- Executive Development Seminar for Managers in Science and Technology, US OPM, 1988
- Legislative Fellowship, Office of Personnel Management, 1987 - 1988

PROFESSIONAL MEMBERSHIPS

- Society of Toxicology – Member of NCAC Metals Program Development Group
- American Association for the Advancement of Science
- American Chemical Society
- Environmental Information Association
- Society of Environmental Toxicology and Chemistry – Member of Metals Advisory Group

HONORS AND AWARDS

- US EPA Silver Medal for Superior Service, **2002**
- US EPA Bronze Medal for Meritorious Service, **1982, 1987, and 1991**
- US EPA Project Management Excellence Award, **1993**
- LEGIS Fellowship, **1987-1988**
- US EPA Special Achievement Award, **1983, 1987, 1990, 1992, and 1997**

MILITARY SERVICE

- **Lt Colonel USAR**, Retired 1995
- **Senior Staff and Command staff positions:**
 - Commanding Officer, 419 Chemical Detachment, Andrews Air Force Base, MD
 - Chemical Officer, 310th Theater Army Command, Ft Belvoir, VA
 - 97th US Army Reserve Command, Ft Meade
 - 352nd Civil Affairs Command, Riverdale, MD
 - US Army Civil Affairs and Psychological Operations Command Ft Bragg, NC

Primary responsibilities included investigating doctrine on troop safety and environmental decontamination from a variety of standard military and non-standard military sources including commercial hazardous materials and commercial and naturally occurring radioactive gases.

SECURITY CLEARANCES

- Top Secret (DA Form 873, July 1991 - June 2004)
- Secret (March 15, 2006)

PUBLICATIONS

Troast R and Willett JD. 2008. Using *Caenorhabditis elegans* as a Tool for Identifying Environmental Lead Contamination: A new endpoint for relating exposures to lead risk. *Environmental Bioindicators* 3:68-73.

Troast R, Willett JD, and Sudama G. 2007. Identification of an Exposure Based Biomarker for Lead using *Caenorhabditis elegans*. Proceedings of the Third International Conference on Environmental Science and Technology V2:419-426.

Gallagher K, Benson WH, Brody M, Fairbrother A, Hasan J, Klaper R, Lattier D, Lundquist S, McCarroll N, Miller G, Preston J, Sayre P, Seed J, Smith B, Street A, Troast R, Vu V, Reiter L, Farland W, and Dearfield K. 2006. Genomics: Applications, Challenges, and Opportunities for the U.S. Environmental Protection Agency. *Human and Ecological Risk Assessment* 12(3):572-590.

Maddaloni M, Ballew M, Diamond G, Follansbee M, Gefell D, Goodrum P, Johnson M, Koporec K, Khoury G., Luey J, Odin M, Troast R, Van Leeuwen P, and Zaragoza L. 2005. Assessing Lead Risks at Non-Residential Hazardous Waste Sites. *Human and Ecological Risk Assessment* 11(5): 967-1003.

Lorenzana RM, Troast R, Klotzbach JM, Follansbee MH, and Diamond GL. 2005. Issues Related to Time Averaging of Exposure in Modeling Risks Associated with Intermittent Exposures to Lead. *Risk Analysis* 25(1):169-178.

Troast R. 2005. When Science Crosses Politics, I: The Case of Naturally Occurring Asbestos. *J. Environ. Health* 67(9): 84. [Author reply]

Lorenzana RM, Troast R, Mastriano M, Follansbee MH, and Diamond GL. 2003. Lead Intervention and Pediatric Blood Lead Levels at Hazardous Waste Sites. *J. Toxicol Environ Health A* 66:871-893.

PRESENTATIONS

Willett JD, Troast R, and Sudama G. 2004. Probing Mechanisms of Toxicity through Metabolic Profiling: Lead and *Caenorhabditis elegans*. Presented at International Conference on Genomics and Science, Cyprus, October 2004.

Troast R and Willett JD. 2004. A New Technique for Assessing Lead Bioavailability. Presented at Fourteenth Annual Conference on Soils, Sediments and Water, Association for Environmental Health and Science, San Diego, CA, March 2004.

Willett J, Troast R, and Sudama G. 2003 Metabolic Profiling and the Mechanisms of Toxicity: Lead and *Caenorhabditis elegans*. Presented at Mechanisms of Genotoxicity conference, Princeton University.

Troast R and Willett JD. 2002. Lead-Induced Physiologic Changes in *Caenorhabditis elegans*. Presented at Medical College of Virginia Genotoxicity Symposium, Richmond, VA, May 2002.

Troast R et al. 2006. The Use of Genomic Markers in *Caenorhabditis elegans* as bio-indicators for environmental lead exposure: A replacement for current *in vivo* and *in vitro* systems? Presented at Tenth International Conference on Biomarkers, Baltimore, MD, April 2006.

Troast, R 2007. Identification of a Exposure Based Biomarker for using *C. elegans*. Presented at the Third International Conference on Environmental Science and Technology, Houston, Tx July 2007.

Troast, R 2013. The Use of the Integrated Exposure Uptake and Biokinetic Model as a Predictive Tool for Lead Based Paint Risk Assessments. Presented at the Annual Meeting of the Environmental Information Association, Crystal City, Va. March 2013.

Troast, R. 2017 Lead – A Continuing Hazard. Presented as part of the Shepherd University President’s Lecture Series. Feb. 2018

EPA Guidance Documents and Reports co-authored

Overview of the IEUBK Model for Lead in Children [NTIS #PB99-9635-8, OSWER #9285.7-31]

IEUBK Model Mass Fraction of Soil in Indoor Dust (MSD) Variable

[EPA #540-F-00-008, OSWER #9285.7-34] (June 1998)

IEUBK Model Bioavailability Variable [EPA #540-F-00-006, OSWER #9285.7-32]

IEUBK Model Soil/Dust Ingestion Rates [EPA #540-F-00-007, OSWER #9285.7-33]

TRW Recommendations for Sampling and Analysis of Soil at Lead (Pb) Sites [EPA #540-F-00-010, OSWER #9285.7-38] (April 2000)

TRW Recommendations for Performing Human Health Risk Analysis on Small Arms Shooting Ranges [OSWER #9285.7-37] (March 2003)

Superfund Lead-Contaminated Residential Sites Handbook [OSWER #9285.7-50] (August 2003)

Assessing Intermittent or Variable Exposures at Lead Sites [OSWER #9285.7-76] (November 2003)

XRF (X-ray fluorescence) Answers to Frequently-Asked Questions (May, 2004)

Estimating the Soil Lead Concentration Term for the Integrated Exposure Uptake Biokinetic (IEUBK) Model [OSWER #9200.1-78] (September 2004)

Guidance for the Sampling and Analysis of Lead in Indoor Residential Dust for use in the Integrated Exposure Uptake Biokinetic (IEUBK) Model [OSWER Dir #9285.7-81] (December 2002)

Reference Manual for the Integrated Exposure Uptake Biokinetic Model for Lead in Children (IEUBK) Windows®32-bit version [EPA 9285.7-44] (May 2002)

Recommendations of the Technical Review Workgroup for Lead for an Approach to Assessing Risks Associated with Adult Exposures to Lead in Soil [EPA-540-R-03-001, OSWER Dir

#9285.7-54] December 1996 (January 2003) -- The Adult Lead Methodology (ALM)

Review of Adult Lead Models: Evaluation of Models for Assessing Human Health Risks Associated with Lead Exposures at Non-Residential Areas of Superfund and Other Hazardous Waste Sites [OSWER Dir #9285.7-46] August 2001 -- The ALM Review Report

Guidance for Evaluating Oral Bioavailability of Metals in Soils for Use in Human Health Risk Assessments OSWER 9285.7-80 (Sept 2007) (Contributor up to Jan 2005)

Estimation of Relative Bioavailability of Lead in Soil and Soil-like Materials Using In Vivo and In Vitro Methods OSWER 9200.3-51 (Sept 2007) (Contributor up to Jan 2005)

Journal Referee – Journal of Toxicology and Environmental Health 2015,

Expert Panel Nominations

USEPA Expert Peer Review to Determine Lead in Drinking Water Safety

USEPA Expert Peer Review for Review of Indoor Lead Dust Hazard

Trial Testimony

Matute v New York City Housing Authority Supreme Court of Kings County, New York 2017

G. Mendez v Kimpson Federal Eastern District of New York 2015

State of Pennsylvania v M. Norly, Chester County, PA. 2015

Updated: 1 Jan 2019
