BEFORE THE HEARING BOARD OF THE

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

In The Matter Of SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, Petitioner, vs. CHIQUITA CANYON, LLC a Delaware Corporation, [Facility ID No. 119219] Respondent.	**Case No. 6177-4** **DECLARATION OF RICHARD C. PLEUS, Ph.D., M.S.** District Rule 402 and Health and Safety Code § 41700_____ Hearing Date: April 24-25, 2024 Time: 9:30 am Place: Hearing Board South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765

I, Richard Pleus, Ph.D., M.S., declare:

1. I provide this declaration based on my knowledge and expertise in human toxicology and pharmacology. I am competent to testify to the facts and opinions set forth herein.

Background and Credentials

2. I am the Founder, Managing Director, and Chief Toxicologist at Intertox, Inc. ("Intertox") in Seattle, Washington. Intertox is a toxicology and environmental consulting firm with expertise in risk assessment, scientific research and communication, business strategy, global regulatory compliance, and design and process evaluation. As a toxicologist, I have worked on landfill projects, composting facilities, wastewater facilities, agricultural facilities, industrial facilities, vehicles, consumer products, medical products, and drugs, all related to human health risk assessments concerning human exposures in consumer, residential, and occupational settings. A copy of my curriculum vitae is attached to this declaration as **Exhibit A**.

3. I have 40 years of experience in toxicology and pharmacology, specializing in interactions between chemicals and the brain. I hold a Bachelor of Science in Physiology, a Master of Science in Environmental Health, and a Ph.D. in Environmental Toxicology from the University of Minnesota. I also completed a post-doctorate in Neuropharmacology at the University of Nebraska Medical Center. My Ph.D. research was conducted in the Department of Pharmacology and in a laboratory that investigated the effects of chemicals on behavior, a discipline called psychopharmacology.

4. I have published numerous peer-reviewed articles and written and edited books and chapters on diverse subjects in toxicology, with expertise in determining the effects of chemicals on the human brain and environment. Among other peer review panels, I recently served as an expert for the Airborne Hazards and Burn Pit Exposure peer review panel and the Toxic Exposures Research Program for the Department of Defense.

5. I regularly assess human health risks and impacts from various emission sources. In odorous constituent data analysis and assessment, I have previously evaluated human health risks from chemicals associated with landfills, composting, and agricultural or industrial activity, both on-site and within the surrounding communities. I have also assessed the production of and exposure to various airborne contaminants. Some relevant examples include the assessment of landfill gases in Washington State, emissions from large industrial and governmental complexes in the United States, and chemicals entrained in commercial and military aircraft around the globe.

6. As mentioned above, the focus of my PhD and post-doctoral training was investigations of the nervous system. As part of my training, I conducted bench-level investigations on how chemicals affect behavior, learning, and memory. Behavior assessment provides a valuable method for examining the overall response of the intact nervous system to a stimulus. I also assessed the mechanistic effects of chemicals at the cellular level. Professionally, I have applied this training to investigate how chemicals affect the central nervous system. Examples include assessing how chemicals affect the developing brain, with cognition as one evaluation endpoint; how pharmaceuticals affect cognition as well as other neurological endpoints; and the effect of chemicals, with distinct odor profiles released from textiles or industrial sources, on human perception and behavior.

7. This declaration is made for the April 24 and 25, 2024 status and modification hearing on the Modified Stipulated Order for Abatement with the South Coast AQMD issued on March 21, 2024 in Case No. 6177-4.

Duties of the Reaction Committee with Respect to Odor and Health Impacts

8. I was appointed to the Reaction Committee on April 4, 2024, to assist with fulfilling the duties of the public health member under **Condition 12(a)(iv)**. This requires that the public health member, among other things, "include in any human health screening evaluation an odor assessment evaluating the potential health impact of exposure to odorants in addition to cancer and non-cancer risk determination." As part of the health impacts report pursuant to Condition 12(g)(vi), due on August 1, 2024, I will be responsible for evaluating potential health impacts from exposure to odorants.

9. The evaluation I will conduct will include explaining the critical role of chemical exposure, neurobiology, and interpretation of odors. I will discuss the anatomy of the nerves and the components of the human brain involved in detecting, analyzing, and characterizing odors. I will discuss the normal physiology of the nervous system. I will discuss the effects of odors on normal physiology and how they can influence behavior. For example, heightened awareness often triggers a "fight or flight" reaction. Importantly, these types of physiological responses are distinct from toxicological responses. It is essential to distinguish between physiological effects (such as heightened awareness) and pathological effects related to chemical exposures at sufficient doses and exposures.

10. To conduct this risk assessment, particularly to evaluate potential impacts on the communities around the Chiquita Canyon Landfill, I will analyze data collected by Chiquita Canyon, LLC's consultants to assess the implications of the odors on odor responses. This will primarily include a review of the following:

a. Odor analysis and data collected by SCS engineers as part of Chiquita's Enhanced Air Monitoring Program;

b. Nasal Ranger data collected by CTEH;

c. Odor surveillance logs prepared pursuant to the Stipulated Order for Abatement;

d. Odor complaint data provided by the South Coast Air Quality Management District; and

e. Any other data collected in support of preparing the Condition 12(g)(vi) health impacts report.

11. With my team's help, I aim to identify odorants that can cause physiological reactions, not toxicological ones. The steps necessary to conduct this evaluation, are, in summary form, as follows:

a. Review air quality and odor data obtained during the course of the elevated landfill temperature event that Chiquita Canyon Landfill is currently experiencing, and prepare a list of chemicals that have been detected in that air and odor monitoring data. The data includes the chemicals, air concentration, and any descriptions (e.g., odor complaints) and measures of odor (e.g., Nasal Ranger measurements). We will likely include considerations of meteorological conditions and any air modeling data.

b. We will obtain odor thresholds and descriptors for chemicals identified in Paragraph 10. a. We will focus on chemical odorants with air concentrations above odor thresholds that are associated with odor characteristics from odor and air monitoring and have odor characteristics perceived as foul or unpleasant in some way based on the descriptors.

c. For the chemicals identified in Paragraph 10.a, we will obtain scientific studies that provide scientific data on the binding of these chemicals to olfactory, facial, and trigeminal nerve end receptors. The focus will be on those chemicals that bind to pressure, irritation, and pain receptors.

d. For those chemicals identified through the work described in Paragraph 10.a, we will conduct additional analysis based on days when odors were strong and compare detected air concentrations to those that bind to receptors. We will also review CTEH's human health risk assessment to assess any chemicals that indicate unacceptable health risks. A chemical odorant measured at concentrations near or above odor thresholds and that matches the odor characteristics identified in the air quality and odor data described in paragraph 10.a., and binds to nerve receptors will be considered a presumptive positive for causing physiological reactions. We will then assess the range of expected physiological responses (e.g., health impacts) to the binding of these chemicals to

olfactory, facial, and trigeminal nerve end receptors by the identified chemical odorants at measured concentrations.

12. I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed on this 19th day of April 2024, in Hanoi, Vietnam.

Richard C. Pleus, PhD, MS
Founder, CEO, Chief Toxicologist
Intertox

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In The Matter Of SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT, Petitioner, vs. CHIQUITA CANYON, LLC a Delaware Corporation, [Facility ID No. 119219] Respondent.	**Case No. 6177-4** **EXHIBIT A TO DECLARATION OF RICHARD C. PLEUS, Ph.D., M.S.** Health and Safety Code § 41700, and District Rules 402, 431.1, 3002, 203, 1150 _____ Hearing Date: April 24, 2024 Time: 9:30 am Place: Hearing Board South Coast Air Quality Management District 21865 Copley Drive Diamond Bar, CA 91765

Curriculum Vitae of Richard C. Pleus, PhD, MS

Fields of Expertise

Toxicology and Pharmacology: Neurological; Aerospace; Endocrinological; Respiratory; Reproductive; Developmental

Education

Postdoctoral training, University of Nebraska Medical Center, 1992, Neuropharmacology

Ph.D., University of Minnesota, 1991, Environmental Toxicology. Research conducted in the Department of Pharmacology. Dissertation title: Neurobehavioral assessment in offspring of the influence of maternal hypoxia and hypercapnia induced by injection of methadone in pregnant rats

M.S., University of Minnesota, 1983, Environmental Health

B.S., Michigan State University, 1977, Physiology, Honors Graduate

Current and Previous Positions

Founder, Managing Director, **& Chief Toxicologist,** Intertox, Inc., Seattle, WA (1995 – present)

Co-Founder & Co-Director, Aerospace Toxicology Association, WA (2022-)

Co-Founder, Intertox Decision Sciences, Inc., Seattle, WA (2009– 2015)

Chair, Working Group 3 – Health, Safety and Environment, ANSI-Accredited U.S. Technical Advisory Group, ISO/TC 229, Nanotechnologies (2007—present)

Adjunct Associate Professor, University of Nebraska Medical Center, Department of Pharmacology, Omaha, NE (1999 – 2014)

Adjunct Associate Professor, University of Nebraska, Center for Environmental Toxicology, Omaha, NE (2002 – 2012)

President, Environmental Toxicology International, Inc., Seattle, WA (1993 – 1995)

Vice President, Marketing & Communications, Environmental Toxicology International, Inc., Seattle, WA (1993)

Senior Toxicologist, Environmental Toxicology International, Inc., Seattle, WA (1992 – 1993)

Community Faculty, Metropolitan State University, St. Paul, MN (1989 – 1996; taught courses in physiological psychology and psychopharmacology)

Research Associate, Department of Pharmacology, College of Medicine, University of Nebraska Medical Center, Omaha, NE (1989 – 1992)

Instructor, General College, University of Minnesota, Minneapolis, MN (1985 – 1989)

Research Assistant, Department of Pharmacology, Medical School, University of Minnesota, Minneapolis, MN (1985 – 1989)

Instructor, Lowthian College, Minneapolis, MN (1983 – 1985)

Instructor, Department of Continuing Education and Extension, University of Minnesota, Minneapolis, MN (1979 – 1983; taught courses on toxicology of cosmetic products and physiological factors contributing to accident susceptibility

SELECT PROJECT EXPERIENCE

AEROSPACE

- Member of the aerospace medical team conducting a Root Cause Corrective Action (RCCA) for the US Navy (NavAir) for Physiologic Episodes (PE) for aircrew of the F/A-18A, F/A-18G and T-45. As one of two toxicologists on the team, reviewed possible chemical exposures to pilots and their potential contribution to PEs. The exposure route of concern was inhalation. Respiratory and neurologic systems were critical organ systems of evaluation.
- Led the Intertox team in toxicological assessments for above wing employees (e.g., aircrew) for two airlines. Evaluated laboratory data, as well as designed and conducted testing of uniforms for over 400 chemicals. The exposure route was absorption via the skin or by inhalation. Respiratory and skin were critical organ systems of evaluation.
- Conducted a toxicological assessment of data from the Bleed Air Extraction and Sampling System (BAESS) in a joint experiment with the US Air Force, NASA, and the Boeing Company. This system simulated the ventilation of commercial aircraft. Jet oil was injected into the engine of a USAF C-17 Globemaster III, and samples of air were pulled from ports along the length of the ventilation system. Assessed over 45 chemicals at a sample location comparable to where aircrew and passengers would be exposed. The exposure route was inhalation, and the health assessment of interest was the respiratory and neurological systems.
- Conducted a toxicity assessment of a composite for passenger aircraft and of laboratory testing data for certification of a new passenger aircraft. The toxicological assessment evaluated short term (acute) toxic hazards of gaseous combustion products relating to human survivability in an aircraft cabin fire. The assessment was conducted using US Federal Aviation Agency report DOT/FAA/AR-95 guidance and submitted to an international authority.
- Conducted an exposure assessment of airborne nanoparticles to aerospace workers. Nano-sized particles are thought be released from sanding or grinding of composite materials containing carbon nanotubules. Exposure routes were absorption via skin, inhalation, or ingestion. The evaluation focused on health effects of the respiratory system.
- Conducted over 45 toxicological assessments of human exposure to the combustion of jet oil and hydraulic fluid in commercial aircraft. Chemicals evaluated were a group of organophosphates that included tricresyl phosphate isomers, tributyl phosphate; and by-products of combustion. The triggering events were foul odors. The exposure route was inhalation, and the health assessment of interest was for the respiratory and neurological systems.

AIR

- Designed and monitored a developmental study for airborne cellulose insulation treated with boron (e.g., boric acid). Pregnant rats were administered four doses during gestation. The results of the experiment produced a NOAEL that can be used to develop acceptable exposures for women workers or women residing in environments where cellulose insulation is used as insulation or acoustic attenuation. The exposure route was inhalation, and the health assessment of interest was reproductive and fetal developmental effects.
- Conducted toxicological assessment for clean-up of lead and arsenic contaminated soil from smelter operating in the 1900s. Conducted historical toxicological research on articles and records dating back to the 1700s. Assessed what was known and when regarding the toxicology of lead (Pb) and arsenic (As) for all body systems and all exposure pathways for both human and ecological endpoints.
- Assessed human health risk from gases released from a landfill. Triggering events for residents were from foul odors. Laboratory data was obtained and carbon disulfide, formaldehyde, and

hydrogen sulfide were identified as the chemicals being released. Route of exposure was inhalation. Cancer and non-cancer endpoints were assessed, with a focus on nervous system for non-cancer effects.

- Conducted a toxicological assessment for human exposure to chloroform and hydrogen sulfide. These chemicals were released as gases from the wastewater treatment system of a pulp and paper mill. Exposures to residents were via inhalation. Cancer and non-cancer effects were assessed with non-cancer effects focused on the respiratory and neurological systems.
- Assessed adverse health consequences to an off-site neighborhood resident from an accidental release of chlorine gas from a manufacturing plant. Exposure was via inhalation. Toxicological assessment was focused on the respiratory system. Assessed cancer and non-cancer endpoints.
- Assessed human health risks related to emissions from a composting facility to nearby community. Followed US EPA guidelines for the assessment. Triggering events were foul odors releases. Exposure was via inhalation. Developed a monitoring program to measure 23 reduced sulfurs, volatile organic compounds, and ammonia. Toxicological assessment consisted of all organ systems, with eventual focus on nervous system. Assessed non-cancer endpoints.
- Conducted toxicological evaluation of sewer gases and their impact to community health. Evaluated over 60 chemicals produced from degradation of plant, animal, and human wastes. All organ systems were evaluated with focus eventual focus on risk from adverse effects to the nervous system. The exposure to these gases was via inhalation.
- Conducted over 30 human and ecological health risk assessments of cement kilns. Chemicals of concern included metals (including As, Cu, Cr, Cd, Zn, Pb, Hg, Ni, Zn), dioxins, furans, and polyaromatic hydrocarbons (PAHs), nitrogen oxides, sulfur oxides, and many other EPA-identified hazardous air pollutants. Depending on the case, assessments focused on specific endpoints, such as neuroanatomical effects, and on vulnerable subpopulations, such as the developing fetuses of local pregnant women. Assessments included review of laboratory data, review of toxicological and medical literature, and review of medical records. Considered routes of exposure included direct exposure from inhalation and multipathway exposures from oral and dermal exposures. US EPA guidelines for assessments were used. Cancer, non-cancer, and ecological endpoints were assessed.
- Conducted a toxicological assessment to residents living nearby a lead smelting and refining operation. Chemicals of concern were lead and arsenic. Considered multipathway exposure, but eventually focused on inhalation and ingestion as major routes. Evaluation consisted of assessing laboratory data, review of the toxicological literature, and included information derived from government agencies. US EPA guidelines were used as a basis for the evaluation. All body systems were evaluated.
- Evaluated a risk assessment for carcinogenic polycyclic aromatic hydrocarbons for a coal burning power plant. Focus was eventually narrowed to assessing a system of toxic equivalency factors based on non-validated assumptions. US EPA guidelines were used as a basis of the assessment. Exposures were considered multipathway. Cancer and non-cancer endpoints were assessed.
- Conducted human health risk assessment from emissions of a thermoplastic extrusion plant. Assessed laboratory data, air dispersion modeling, and calculated estimates of hazards for acute exposures to residents living near the facility. Used US EPA guidelines as a basis for the evaluation. Chemicals evaluated included acrolein, 1,3-butadiene, 4-vinylcyclohexane, styrene, and triphenylphosphate. The exposure was via inhalation. Cancer and non-cancer endpoints for all body systems were considered.

- Assessed human health risk of workers in a facility that was being built to decommission chemical warfare agents. Evaluated human acute exposures to sarin and mustard gases. Route of exposure was inhalation. Compared and contrasted reported health effects from acute exposures to health effects reported to those published in the toxicological literature. Thirteen non-cancer endpoints, with a focus on the nervous system, were assessed.
- Evaluated human health risks to residents living near an accidental chemical release and subsequent fire from rail cars filled with chlorine and methyl mercaptan. Route of exposure was via inhalation of parent chemical agents and work included assessing the human health risk from byproducts of pyrolysis. Non-cancer endpoints were assessed.
- Evaluated human health risks from exposure to stack emissions from a proposed fluidized bed incinerator. Air dispersion monitoring was used to estimate air concentrations at critical receptors at nearby neighborhoods. Followed US EPA guidelines for the assessment. Toxicological assessment was conducted for metals (As, Cr, Cd, Pb, Hg, Ni), dioxins, furans, polyaromatic cyclic hydrocarbons, nitrogen oxides, sulfur oxides, and other US EPA identified hazardous air pollutants. Reviewed potential effects for all body systems for cancer and non-cancer endpoints. The results of this toxicological assessment was presented to the community.
- Conducted a review of a state's proposal for biological monitoring of residents and their pets residing in a town that built and operates a hazardous waste incinerator. Followed US EPA guidelines for the assessment. Assessed the reliability and accuracy of bio-monitoring parameters relative to chemicals of potential concern. Exposure route was inhalation. Non-cancer endpoints assessed.
- Conducted toxicological assessment of multiple emission sources within an industrial park in the Bahamas to nearby residents. Oil terminals, pharmaceutical plants, power plants, and chemical plants operated in the park. Conducted extensive emissions inventories and source evaluation surveys to gather data to assess individual contributions and cumulative effects of emissions. Toxicological assessment consisted of all organ systems. Cancer and non-cancer endpoints were assessed.
- Conducted multiple human health risk assessments for a number of different facilities in a US state. Facilities included a newly designed bus manufacturing plant and several beet processing plants. These were the first air screening risk assessments conducted by this state. Conducted toxicological review of nearly a 100 chemicals, including metals (As, Cr, Cu, Cd, Pb, Hg, Ni, Zn) emitted from each facility. Assessed oral, dermal and inhalation routes of exposures through multipathway analysis. Cancer and non-cancer endpoints were evaluated.
- Reviewed multipathway human health risk assessment for a medical waste facility for the 173 acre Chris Hani Baragwanath Academic Hospital, in Soweto, South Africa. Chemicals evaluated included metals (As, Cr, Cu, Cd, Pb, Hg, Ni, Zn), dioxin, furans and polycyclic aromatic hydrocarbons. Exposure was evaluated for residents living nearby. Cancer and non-cancer endpoints were assessed.
- Conducted human health risk assessments for emissions from several coal-fired electric generating stations in Texas, Illinois, Massachusetts, Michigan, and Washington. Followed US EPA and pertinent state guidelines for the assessments. The evaluations included metals (As, Cr, Cd, Pb, Hg, Ni), dioxins, and furans, and polyaromatic hydrocarbons, which became newly reportable under the US EPA's Toxic Release Inventory (TRI) program. Toxicological assessment was conducted for other additional metals. Exposure was via inhalation. For some facilities, potential risks through oral, inhalation, and dermal pathways were assessed. Evaluated all organ systems for cancer, non-cancer, and ecological endpoints.

- Conducted a toxicological assessment of human health risks from lead deposited in agricultural soil. Lead was released from the operation of a steel manufacturing plant. Assessment used the US EPA Uptake/Biokinetic Model for Lead to evaluate human exposure. Environmental fate was followed through the food chain from soil to human food sources. A review of the literature was conducted. Route of exposure was primarily ingestion. Non-cancer endpoints were assessed with the focus on nervous system risks.

POLICY AND LEGISLATION

- Briefed Costa Rican governmental and private representatives on the principles that underlie the toxicological assessment of nanotechnology. Included in the briefing were the Minister of Science and Technology, the Vice minister of Science and Technology, President of Instituto Tecnológico de Costa Rica, and the Vice president of Research at the Instituto Tecnológico de Costa Rica.
- Participated in technical discussions with several members of the European Parliament, in Brussels, Belgium, on developing appropriate scientifically based regulations to prevent adverse health effects from burning hazardous waste in cement kilns.
- Participated in technical discussions with South African governmental and private industry representatives on land, water, and air legislation, and the benefits of science and risk-based environmental legislation.

PHARMACEUTICALS

- Conducted numerous toxicological assessments for ethanol as an agent of interest in legal proceedings. Tasks included reviewing case documents and testimony for relevant information regarding potential ethanol exposure, developing physiologically-based pharmacokinetic models to scientifically estimate the potential degree of alcohol intoxication during relevant events, and drafting expert reports or providing testimony based upon the above analysis.
- Provided a toxicological assessment for over 30 toxicological assessments related to the testing and evaluation of biologic tissue (e.g., urine, hair, serum) samples for concerns of drug exposure, including ethanol, methamphetamine, benzoylecgonine, phencyclidine, nortriptyline, and amphetamine. Tasks included evaluations of test results for indications of adulterants or dilution, assessing methodological techniques, and determining the toxicological impacts and the signs and symptoms that might be associated with the levels of drugs detected. Routes of exposure where inhalation and ingestion. Research also focused on genetic determinants of nervous system affects, although other endpoints were included.
- Conducted numerous toxicological assessments for opiate and opioid narcotic analgesic agents as a possible cause of death. Assessments included analyzing laboratory data, medical records, and medical literature analyses. Routes of exposure was ingestion. Toxicological assessment focused on the neurological system that included respiratory and psychological effects.
- Conducted a toxicological assessment for an antibiotic agent as a possible cause of death. Assessments included analyzing laboratory data, medical records, and medical literature analyses. Toxicological assessment focused on numerous body organs.

PRODUCT SAFETY

- Conducted product safety assessments of bacteria for human health safety. Specific organisms are used in preserving fruit, de-nitrification of surface water, and improving water quality in swimming pools. Conducted microbiological risk assessments for human health effects as well as providing scientific documents to international governmental authorities.

- Conducted product safety assessment for laser printing device. Assessed the materials used in the cutting process and the fumes from the process of cutting. Evaluated the emissions related to possible human health effects for acute and chronic exposures.
- Conducted a scientific assessment for fungus for a toy distributed to the US, Europe and Asia. Laboratory tests were conducted, biological assessment was conducted, and an approach to possible disposal was developed to address possible disposal options. Assisted in developing forensic analysis to determine the cause of the mold. Evaluated acute and subchronic exposures from contact with skin and breathing spores.
- Conducted toxicological assessment for consumer-used ink products for Japanese manufacturer. Assessed human health risk using American Society for Testing and Materials (ASTM) standards. Over 50 chemicals were evaluated for various oral, dermal, and inhalation routes of exposure. Toxicological assessment for all body systems, and included cancer and non-cancer endpoints.
- Conducted a toxicological assessment of human exposure to chemicals found in a cell-phone and its packaging. Employees were exposed to unknown chemicals and subsequently reported acute health effects. Developed a testing program to determine chemicals of potential concern. Identified a number of solvents and assessed toxicological effects from exposure via inhalation and dermal contact. Developed a forensic program to evaluate source. Acute non-cancer endpoints evaluated.
- Conducted a toxicological assessment to human health from several volatile organic compounds, silane, and siloxane released from weather treating products. Route of exposure was inhalation and population of concern included children. Non-cancer endpoints were assessed and focused on the nervous and respiratory systems.
- Conducted a toxicological assessment of multiple chemical cleaning solutions and carbon monoxide on reproductive effects. Exposure to pregnant woman occurred while visiting a commercial art store. Exposure was via inhalation. Toxicological assessment focused on reproductive and neurological systems. Research also focused on genetic determinants of nervous system affects.
- Conducted human and ecological risk assessment of ethylene vinyl alcohol, a chemical used to make shipping packaging “peanuts.” Reviewed laboratory data, the toxicological literature, and the use and fate of the material as a consumer product. Endpoints of evaluation were human and ecological receptors. US EPA guidelines were used as a basis of the evaluation. For human exposure, cancer and non-cancer endpoints were assessed.
- Conducted a toxicological assessment of a consumer product, an ink-pen barrel which was constructed of pressed recycled rubber-tire. Reviewed laboratory data and conducted a review of the toxicological literature. Used US EPA risk assessment guidelines as a basis for assessment. Chemicals evaluated included metals (As, Cr, Cd, Pb, Hg, Ni) and organic hydrocarbons. Cancer and non-cancer endpoints for all body systems were considered.
- Prepared a human health risk assessment of occupational exposures to cellulose insulation. Conducted a review of the toxicological literature of paper dust, wood dust, and chemicals found in newsprint. Assessed the exposure from inhalation to paper and wood dusts. Evaluated cancer and non-cancer endpoints.
- Conducted toxicological, human, and ecological risk assessment of a variety of herbicides used by WA State’s Department of Transportation for use on state roadways. Assessed human and ecological health risk associated with roadside vegetation management practice. Multipathway exposures were conducted and included the evaluation of sensitive human and ecological populations. Cancer and non-cancer endpoints were assessed.

- Conducted toxicological assessment of a consumer-related use of a product for cleaning outdoor camping equipment. The chemicals evaluated were ethylenediaminetetraacetic acid (EDTA), sodium hydroxide, nonylphenol polyethylene glycol ether, and dipropylene glycol monomethyl ether. The concern was the adverse impact of these chemicals on the non-cancer endpoints of the nervous system, particularly the eye.
- Conducted a toxicological assessment of fog-oil released from a military training facility. Fog-oil is used as a chemical obscurant in training exercises. Fog-oil migrated off-base into residential neighborhoods. Benzene and a number of other volatile organic compounds were evaluated toxicologically via inhalation exposure. Evaluation focused on cancer and non-cancer hematological effects.
- Conducted toxicological assessment on human health risks from of cellulose insulation containing ammonium sulfate-based flame retardant. Exposure was via inhalation. Developed a single-compartment, first-order model to describe the environmental fate and transport of ammonia in a residential setting. Used US EPA guidelines for the evaluation. Cancer and non-cancer endpoints were considered. Also, the production of foul odor was evaluated.
- Conducted toxicological evaluation of boron (B)-containing pesticide. All organ systems were evaluated. Exposures were ingestion, dermal, and via inhalation. Conducted exposure assessment with a university laboratory as a part of the assessment. Eventually focused on the reproductive effects of boron pesticide. All information was forwarded to the State of California for review and assessment of the data. Cancer and non-cancer endpoints were considered.

WORKPLACE

- Developed medical monitoring protocol for governmental client. The chemical of concern was mercury, including the various species of inorganic and organic mercury. The key objective of the Mercury Medical Monitoring Program was to protect employees who may be exposed to elemental or organic mercury (Hg) during maintenance, construction, and remediation tasks. Cancer and non-cancer endpoints were considered.
- Assessed several cases where employees were suspected of using recreational drugs. We reviewed drug testing data and performed physiologically based pharmacokinetic (PBPK) modeling when needed. The cases involved different families of drugs including opiates, ethanol, and cannabinoids. Most exposure routes were oral and included injection and inhalation.
- Assessed risk to human health of workers exposed to chemicals from the re-entrainment of exhaust air in a pharmaceutical research laboratory. Exposure was via inhalation. Odors were detected and were the triggering event at the workplace. Chemicals were identified and estimated concentrations calculated. Toxicological assessment included all body systems, with eventual focus on reproductive and nervous systems. Non-cancer endpoints assessed.
- Assessed health effects of a worker exposed to fumes asphalt roofing and solvent-based and latex paints. Exposures were via inhalation and dermal routes. Numerous non-cancer endpoints were assessed.
- Conducted toxicological assessment for workers exposed to trichloroethylene (TCE). Conducted evaluation of the literature and laboratory data from the facility. TCE was used extensively in the facility as a degreaser and all routes of exposure were assessed. However, assessment eventually focused on risks for the development of neurobehavioral effects to offspring of women exposed to TCE from ingestion of drinking water as that was deemed the most sensitive endpoint. Evaluated the use of medical monitoring for this population.

- Conducted a toxicological assessment to human health from exposure to perchloroethylene (PCE, or tetrachloroethylene) from contaminated ground water. Evaluated ingestion and dermal contact with water and inhalation of volatiles during showering or bathing. Toxicological assessment included general toxicology and focused on the nervous system.
- Conducted toxicological evaluation of a worker to exposure to beryllium (Be) and polonium (Po) dust and residue. Evaluated exposures via inhalation, dermal, and to a lesser degree oral from dust. Cancer and non-cancer endpoints assessed.
- Conducted toxicological assessments related to the waste from production of plutonium (Pu) at the Hanford Reservation in eastern Washington, for the US DOE site contractor. We conducted toxicological assessments for chemicals present in underground storage tanks, including metals and organic compounds. This included developing Temporary Emergency Exposure Limits (TEELs) and other toxicity guidelines for worker exposure that were peer reviewed by Argonne National Laboratories, evaluating exposures to workers related to potential accident scenarios, and developing computer visualization tools to assist workers with understanding the significance of detected chemical concentrations.

SOIL

- Conducted field research on workers in wood treatment facilities to copper chromium arsenate (CCA), formerly used as a wood preservative. Airborne exposures to hexavalent chromium (Cr VI) and arsenic (As) were of primary focus. Data was submitted to US EPA. New technique for detecting lower quantities was developed. Route of exposure was primarily via inhalation. Cancer and non-cancer endpoints were assessed.
- Conducted a comprehensive risk assessment addressing human health risks related to dioxins and polyaromatic hydrocarbons (PAHs) in soil at a wood treating facility listed by US EPA as a Superfund site. Followed US EPA guidelines for the assessment. Exposure assessment was multipathway and included exposures to workers and residents living near the facility. Conducted a probabilistic risk assessment to characterize uncertainty and variability in worker exposures and identify parameters contributing most significantly to uncertainty in risk estimates. Developed site-specific parameter distributions, and characterized current scientific knowledge of the bioavailability of dioxins and PAHs in soil. Work was submitted to US EPA. Cancer and non-cancer endpoints assessed.
- Conducted human and ecological risk assessment from the effects copper slag leachates. Reviewed laboratory data, conducted toxicological literature review on human and ecological receptors. Evaluated arsenic (As), copper (Cu), cadmium (Cd), and zinc (Zn). US EPA and Washington state guidelines were used as basis for this assessment. For human exposures, cancer and non-cancer endpoints were considered.

WATER

- Reviewed and assessed the toxicity of multiple perfluorinated chemicals, including perfluorooctnoate (PFOA) and perfluooctosulfonate (PFOS). Assessed the current state of toxicological knowledge, evaluated guideline levels of state and federal government. Issues of concern included assessment of the appropriateness of extrapolating from other species, the use of safety factors, and co-exposure to other chemicals. Cancer and non-cancer endpoints assessed.
- Was a scientific expert input to a Court developed science panel (C-8 Science Panel) on behalf of legal settlement (PFOA was the chemical of concern) in West Virginia. The panel was made up of independent scientists jointly chosen by the plaintiff and defense as a component of a legal settlement. My work was focused on identifying laboratory to conduct

biological analysis as well as experimental design for medical testing. Exposure to PFOA was from drinking water exposure that includes oral, respiratory (e.g., showering), and skin routes.

- Conducted a human health risk assessment for city in the State of Washington. We conducted a toxicological evaluation to estimate the possible human health risks associated with exposure to polychlorinated biphenyls (PCBs) and other chemicals from building materials at the former water treatment plant. Focused on cancer and non-cancer endpoints.
- Conducted an evaluation of non-standard neuropsychological tests as a means to demonstrate adverse effects to chemical exposure. Chemicals evaluated were perchlorate and a number of petroleum chlorinated solvents (e.g., TCE, PCE) in ground water. Routes of exposure were via oral and inhalation. Non-cancer endpoints evaluated with focus on the nervous system.
- Evaluated over 50 chemicals of potential human health and ecological consequences of exposure to Endocrine Disruption Chemicals (EDCs) and pharmaceuticals and personal care products (PPCPs) in reuse water for a large reuse water management agency. Identified contaminants of greatest concern based on likelihood of occurrence and resistance to treatment processes used at various facilities as well as potential for environmental exposure and health effects. Exposure routes of concern include drinking, breathing from aerosols from showering, and skin contact from bathing. Communicated the potential risks to the public and to regulators.
- Assisted in the evaluation and identification of sources of contamination for a screening-level ecotoxicologic assessment of select chemicals of potential concern (COPCs). Analysis concluded that sampling locations were associated with several COPCs exceeding their level of concern (LOC) for water. Further evaluation indicated that the relationship between sediment, water, and animal tissue was not always synchronous, COPCs with identified benchmarks should be evaluated, and LOCs not likely to pose a risk should be identified appropriately. Ecological endpoints were assessed. COPCs including organics (chlorpyrifos, hexachlorobenzene, organochlorine pesticides, pentachloroanisole, pentachorobenzene, PCBs, and tetrachlorobenzene) and inorganics (Al, Sb, As, Ba, Be, B, Cd, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Sr, Ti, V, and Zn) were analyzed and assessed in water, sediment, fish, and bird eggs.
- Assisted in a toxicological assessment of human health risk from ingestion drinking water containing trace amounts of personal care products, endocrine disrupting chemicals (EDCs) and pharmaceuticals in drinking water. Both cancer and non-cancer endpoints were assessed. Non-cancer endpoints included nervous system, endocrine system, reproductive system, and immune system. Ecological endpoints were examined.
- Conducted scientific assessment of the human health risk for exposure to perchlorate. Followed US EPA guidelines for the human health assessment. Addressed multipathway exposures to perchlorate that also included exposures to sensitive populations, such as pregnant women, and ecological endpoints. Provided scientific comments to US EPA's development of a reference dose, as well as to the State of California regarding the development of a Public Health Goal and proposed Proposition 65 listing. Cancer and non-cancer endpoints assessed.
- Conducted a review of a state's proposal for biological monitoring of residents and their fluoride. This assessment also considered human exposures from metals, found as a contaminants of sodium hexafluorosilicate or hexafluorosilicic acid. Evaluated ingestion of fluoride in sensitive human populations, including the elderly and children. Both cancer and non-cancer endpoints evaluated.
- Conducted toxicological assessment for health risk from drinking water. Chemicals evaluated included perchlorate, TCE, and N-nitrosodidimethylamine (NDMA). Assessment consisted of

evaluating laboratory data, modeling data, toxicological literature, medical literature, and medical records. The major route of exposure was ingestion, however, dermal and inhalation routes were also reviewed.

- Conducted toxicological evaluation of human health related to fluoride. Water fluoridation is the practice of adding fluoride compounds to water with the intended purpose of reducing tooth decay in the general population. Conducted a review of the toxicological and medical literature in addition to US and European governmental assessments of fluoridation. The major route of exposure was ingestion, however, dermal and inhalation routes were also reviewed.
- Conducted toxicological assessment of the risk of oral exposure to lead to children via drinking water from Seattle Public Schools. Used physiologically based pharmacokinetic modeling to develop blood lead estimates for children of different ages. Non-cancer endpoints were focused on neurodevelopmental affects.
- Conducted a toxicological assessment related to oral exposures of ground water contaminated with low levels of perchlorate to residents of a community. Toxicological assessment considered possible doses, exposures via dermal, ingestion, and inhalation (e.g., taking a shower). Evaluated sensitive populations that included the pregnant woman and children.

BIOLOGICAL RISK ASSESSMENT

- Developed and conducted an independent sampling program to test certain building materials for the presence of fungal spores and/or hyphal fragments that might indicate current fungal growth or the possibility of fungal growth in the future. Analyses included both direct microscopy for identification of any fungal spores to the genus level and culture of viable samples on appropriate nutrient media.
- Assisted in the evaluation of a proposed Concentrated Animal Feeding Operation (CAFO) facility for potential human health and ecological impacts from possible facility releases for both human and ecological endpoints. The facility was intended for closed loop operation and designed to prepare 20,000 head of cattle for market. Chemicals of concern included hormones, antibiotics, and pesticides. Pathogens were also assessed. This unique CAFO design comprised of the following operating units: beef facility, ethanol producing facility, combined heat and power facility, nutrient separator, greenhouse facility, water treatment facility, fluidized bed reactor, and composing facility.
- Provided scientific support for numerous commercial and residential indoor air quality claims concerning alleged adverse health effects due to exposures to microbiological agents. Critically evaluated laboratory data, the method of collection and analysis, medical records, and toxicological literature regarding exposure to fungal toxins in indoor air and their potential for causing long-term adverse health effects. Also included in some assessments was the release of volatile organic compounds from fungi. Assessed validity and reliability of information on the nature and extent of exposure, interpreted receptor health status, evaluated toxicological basis for health complaints, and identified potential sources of confounding causality. Many organisms have been evaluated, however, most commonly evaluated are *Aspergillus, Penicillium* and *Stachybotrys*.
- Conducted biological assessment of workers exposed to bioaerosols, a conditioning agent used to dewater sludge (CLARIFLOC® C-9525 POLYMER), and particulates from an advanced wastewater treatment plant. Evaluated the chemical and biological constituents of dewatered sludge. Reviewed laboratory data, conducted microbial, viral, and chemical literature review, and conducted site assessments. Route of exposures were inhalation and ingestion. Non-cancer endpoints were assessed. A review of employee protection was also conducted. Conducted an anthrax investigation at a military mail facility. Developed and implemented a sampling and

analysis program to determine whether *Bacillus anthracis* (anthrax) organisms could be detected. The biological assessment included a review of the microbiological literature; development of state-of-the-science sampling approach; refining a work plan to address site-specific elements; preparation of work plan; collection of samples; coordination of laboratory analysis; interpretation of results; and preparation of final project documentation and results reporting.

- Conducted biological assessment of residents exposed to *Salmonella* and *E. coli* emanating as bioaerosols from a cattle feedlot. Reviewed laboratory data, conducted microbial, viral, and chemical literature review, and conducted site assessments. Route of exposures were inhalation and ingestion. Non-cancer endpoints were assessed. Prepared a work plan to assess the adverse health effects related to microbial contamination of a potable private well-water supply. Work plan included examination of exposure events, identification of microbial agents of concern (MAOC), and identification of possible health effects associated with direct and indirect contact with MAOCs detected in sewage.
- Evaluated the performance of immunoassay biological agent detection instrumentation for an instrument developer. Conducted independent tests to determine the minimum level of spore delectability of two specific instruments for viable anthrax spore vaccine and *Bacillus thuringiensis*.

PESTICIDES

- Assisted with toxicological assessment of human exposure to an herbicide, acrolein, a pungent chemical used in urban settings to control weeds in public water systems. Odor is likely a human trigger to the presence of this chemical. Routes of exposure included inhalation, ingestion (from water and fish) and dermal exposure (from swimming). Toxicological assessment consisted of a review of the toxicological literature, evaluation of communities, and assessment of accident scenarios. Non-cancer endpoints were assessed.
- Managed a human and ecological risk assessment project for a state Department of Transportation agency. The purpose of the project was to estimate the potential human health and ecological risks associated with agency use of herbicides for roadside vegetation management. The evaluation addressed the general public and workers applying herbicides. Produced a risk assessment report and made herbicide risk management recommendations to the client.
- Conducted a toxicological assessment for Malathion (pesticide) exposure on human health. Assessment included analyzing laboratory data, medical records, and medical literature analyses. Non-cancer endpoints evaluated, with eventual focus on the nervous system.
- Conducted a toxicological assessment of human exposure to a chemical intermediate used in the production of carbamate pesticides. Worker exposures were assessed for inhalation of intermediate compounds. Conducted toxicological assessment of the literature and prepared a toxicology profile for the chemical. The work was submitted to the US EPA. A surrogate reference dose was developed and presented for information purposes. Toxicological assessment of all body systems was conducted for cancer and non-cancer endpoints.
- Conducted a toxicological evaluation of pesticides and their combustion by-products to residents living nearby a pesticide warehouse. Chemicals evaluated pesticides (e.g., organophosphates) and herbicides (e.g., glyphosate). Toxicological assessment considered all organ systems, however, assessment eventually focused on the nervous system.
- Conducted a toxicological assessment related to a consumer from the use of indoor pesticides. Pesticides contained boron, which was the chemical evaluated. Exposure was predominately via inhalation. All organ systems were considered for non-cancer endpoints.

EXPERT PEER REVIEW PANELS

- 2023 Neurotoxicology expert for: Airborne Hazards and Burn Pit Exposure (AHBPE-2) peer review panel of the 2022 Toxic Exposures Research Program (TERP) for the Department of Defense (DOD) Congressionally Directed Medical Research Programs (CDMRP).
- 2018-2019 Aerospace medicine, physiology, and toxicology clinical review team for the US Navy (NavAir) Root Cause Corrective Action (RCCA) for Physiological Episodes (PEs) for pilots of F/A-18H and G models and T-45.
- 2010-2012 Science Advisor for the Nanosafety Consortium for Carbon, Washington, D.C.
- 2004-present Ad Hoc Science Review Board Member of the US Environmental Protection Agency (US EPA) Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Scientific Advisory Panel.
- 2009 US Environmental Protection Agency (US EPA) Nanomaterial Case Studies Workshop: Developing a Comprehensive Environmental Assessment Research Strategy for Nanoscale Titanium Dioxide, Durham, NC, September 29 and 30.
- 2009 US Environmental Protection Agency (US EPA) - External Peer Review Panel of the Toxicological Review of Nitrobenzene (CAS No. 98-95-3), In Support of Summary Information on the Integrated Risk Information System (IRIS), published January 2009.
- 2009 Expert Peer Panel of Tertiary-Butyl Acetate (TBAC), Toxicology Excellence for Risk Assessment (TERA), Cincinnati, OH. January 7 & 8.
- 2007 US Environmental Protection Agency (US EPA) - Integrated Risk Information System (IRIS) Peer Review of Nitrobenzene, Washington, DC, May 15.
- 2004 Resorcinol Peer Review Meeting: Follow-up Review to 2003, Toxicology Excellence for Risk Assessment, Harrisburg, PA. November 17 & 18.
- 2004 Federal Insecticide, Fungicide, and Rodenticide Act Scientific Advisory Panel Meeting: Consultation on Dermal Sensitization Issues for Exposures to Pesticides, Arlington, Virginia. May 4-6.
- 2003 Resorcinol Peer Review Meeting, Toxicology Excellence for Risk Assessment (TBAC), Cincinnati, OH. April 18 & 19.

PEER REVIEWER

- Environment International
- Chemical Research in Toxicology
- Journal of Agricultural and Food Chemistry
- International Journal of Environmental Research and Public Health
- Current Medicinal Chemistry

CONFERENCES AND SYMPOSIUMS

- 2013 Steering Committee member for the upcoming Gordon Conference "Environmental Nanotechnology: Novel Approaches to Meet Global Challenges." Vermont, USA.
- 2013 Co-Chair for "The Small-Business Community" breakout session of the "National Nanotechnology Initiative Workshop: Stakeholder Perspectives on the Perception, Assessment, and Management of the Potential Risks of Nanotechnology." National Nanotechnology Initiative, Washington D.C., USA, September 10-11.
- 2012 Organizer for the "Water Research Foundation Workshop Assessing Potential Short-Term Impacts of Chloramination." Water Research Foundation, Seattle, WA, December 6-7.

- 2011 Roundtable Participant for the "Washington State Green Chemistry Roundup," the Pacific Northwest Pollution Prevention Resource Center (PPRC), May 25-26.
- 2010 Invited Speaker for the "Capstone Meeting: Risk Management Methods & Ethical, Legal, and Societal Implications of Nanotechnology", the National Nanotechnology Initiative (NNI), Washington DC, USA, March 30-31.
- 2009 Co-Chair for the In Vitro Plenary of the "Nanomaterials and Human Health & Instrumentation, Metrology, an Analytical Methods" Workshop, the National Nanotechnology Initiative, Washington DC, USA, November. The workshop brings together thoughts and ideas to recommend which direction the federal government's nano EHS research strategy.
- 2009 Planning Committee Chair Member for the "Nanotechnology Health & Safety Forum (NHSF)", Seattle, USA, June. The NHSF explored the multiple perspectives of nanotechnology.
- 2007 Committee Member for the "Naphthalene State-of-the-Science Symposium," University of Nebraska Center for Environmental Toxicology, Monterey, USA. October. The Symposium is a scholarly peer review of critical scientific information underlying a federal health risk assessment.
- 2003 Organizing Committee Member for the "Perchlorate State-of-the-Science Symposium," University of Nebraska Medical Center, Omaha, USA, September. The Symposium is a scholarly peer review of critical scientific information underlying a federal health risk assessment.

Select Educational Courses

- Lecturer 2015-2017. Review of the human science for perchlorate. University of Minnesota
- Lecturer 2015. Comparing the toxicology of conventional chemicals to nano-objects. Presented for the course 'ECE 383 / CSI 383 Nanotechnology: Simulation and Design', taught by the Department of Electrical & Computer Engineering, Portland State University.
- Lecturer 2013. Comparing the toxicology of conventional chemicals to nano-objects. Presented for the course 'ECE 399 / CSI 399 Nanotechnology: Simulation and Design', taught by the Department of Electrical & Computer Engineering, Portland State University.
- Lecturer 2012. Guidance on Physicochemical Characterization for Manufactured Nano-objects Submitted for Toxicological Testing: ISO TC-229 Project Work. Presented at a Bar-Ilan Institute of Nanotechnology and Advanced Materials Seminar. Tel Aviv, Israel, October 15.
- Lecturer for Department of Pharmacology, University of Nebraska Medical Center. Provided lectures on toxicology for medical, pharmacy, graduate and physician assistant students at the University of Nebraska Medical Center, Department of Pharmacology.
- Presented two courses in human health risk assessment for staff of the Technical Research Council in South Africa. The purpose of the course was to introduce multi-pathway risk assessment as a means for evaluating potential chemical exposures associated with various industrial activities in South Africa.
- Developed and taught over five courses on risk assessment and risk communication for the Air & Waste Management Association. The courses address toxicology, multi-pathway risk assessments for combustion sources, uncertainty analyses, and risk communication.
- Lectured on toxicology of the sensory system and neuroimaging in graduate student courses at the University of Washington.
- Developed, managed, and team-taught several courses on toxicology, risk assessment, and risk communication for the managers and staff of chemical plants, utilities, oil companies, railroads, and for government officials. Courses have been presented in California, Pennsylvania, Arizona, Missouri, France, and South Africa.

GRANTS AND AWARDS

- Grant Awarded, WRF 5085: Impact of Haloacetic Acid MCL Revision on DBP Exposure and Health Risk Reduction; (Richard Pleus Co-Investigator) 2021.
- Grant Awarded, WRF 4214: Development of Acceptable Daily Intakes (ADIs) for Pharmaceutical and Personal Care Product Ingredients, Hormonally Active Compounds, and Other Potentially Highly Toxic Compounds of Emerging Interest in Water Using the Minimum Anticipated Biological Effect Level (MABEL) Approach (Richard Pleus and Gretchen Bruce, Principal Investigators) 2008.
- Grant Awarded, WRF-05-005: Identifying Hormonally Active Compounds, Pharmaceutical Ingredients, and Personal Care Product Ingredients of Most Health Concern from Their Potential Presence in Water Intended for Indirect Potable Reuse; in collaboration with SNWA (Shane Snyder, Principal Investigator), 2007-2008.
- Grant Awarded, Center for Produce Safety 2012-208: Apple growing and packing microbial risk factors and their potential to lead to foodborne disease outbreaks (Richard Pleus, Principal Investigator), 2012.
- Grant Awarded, WaterRF 4387: Development of a Water Utility Primer on EDCs/PPCPs for Public Outreach (Gretchen Bruce and Richard Pleus, Principal Investigators) 2012-2015.
- Grant Awarded, WaterRF 4320: Assessing Potential Short-Term Impacts of Chloramination. Water Research Foundation (Richard Pleus, Principal Investigator) 2011-2015.
- Grant Awarded, AwwaRF/WRF 3085/04-003: Toxicological Relevance of Endocrine Disruptors and Pharmaceuticals in Drinking Water (2004-2008); in collaboration with Southern Nevada Water Authority (SNWA) (Shane Snyder, Principal Investigator), 2008.
- Grant Awarded, AwwaRF 3033: Comprehensive Utility Guide for Endocrine Disrupting Chemicals, Pharmaceuticals, and Personal Care Products in Drinking Water; in collaboration with SNWA (SHANE Snyder, Principal Investigator), 2005-2006.
- Grant Awarded, WRF-06-018: Tools to Assess and Understand the Relative Risks of Indirect Potable Reuse and Aquifer Storage and Recovery Projects (2006-present) (*DRAFT*); in collaboration with Nellor Environmental Associates, Inc. and Soller Environmental, LLC (Margie Nellor and Jeff Soller, Principal Investigators)
- Elected to Delta Omega Honorary Society in Public Health, 2003.
- Best Paper: Pleus R.C., Goodman G. and Mattie D.R. Development of a Reference Dose for Perchlorate: Current Issues and Status. Presented at the 50th Joint Army-Navy-NASA-Air Force (JANNAF) Propellant Development and Characterization and Safety and Environmental Protection Subcommittees Joint Meeting, Cocoa Beach, FL. May 2000.
- Faculty Mentor of the Year Award, General College Student government, University of Minnesota, Minneapolis, MN. 1989.
- Director of Undergraduate Research Opportunities Program Award, University of Minnesota, for the research proposal, *The effect of fetal hypoxia on fetal brain development*. 1987.
- Director of Undergraduate Research Opportunities Program Award, University of Minnesota, for the research proposal, *Use and operation of autoshaping and fixed ratio paradigm in environmental toxicology research*. 1986.
- Scholl Fellowship, National Sudden Infant Death Foundation, Landover, MD. 1985.
- US Public Health Traineeship Award, United States Public Health Service, Washington, DC. 1979.

PROFESSIONAL MEMBERSHIPS

- American Society for Pharmacology and Experimental Therapeutics
- Association for the Advancement of Science
- Society for Neuroscience
- Society of Toxicology

DIRECTORSHIPS

- 2010 – 2018 Member, Board of Directors for the Nanotechnology Industries Association (NIA), Brussels, Belgium
- 2004 – 2007 Member, Board of Directors, Frontier Geosciences, Inc. Seattle, WA.
- 2001 – present Member and former Secretary, Board of Directors, Urban Environmental Institute. Seattle, WA.
- 1998 – 1999 Member, Board of Directors, Northwest Sculling Association. Seattle, WA.
- 1996 – 1998 Vice President, Seattle Yacht Club Rowing Foundation. Seattle, WA.
- 1989 Member, Board of Directors, Insight, Inc. Stillwater, MN.

ADVISORY POSITIONS

- 2013 – 2017 Member of the University of California Center for Environmental Implications of Nanotechnology (UC CEIN) External Science Advisory Committee (ESAC). Selected for expertise on nano-related EHS issues.
- 2012 Invited Expert for the "BRE Cabin Air Quality Workshop." The BRE Group, London, England, February 20-21.
- 2011 U.S. delegate for the U.S.-Russia Bilateral Presidential Commission on Science and Technology, March 1 through 5. Selected for expertise on nano-related EHS issues.
- 2010 – 2017 Chair of the Science Advisory Board, *National Institute of Biomedical Imaging and Bioengineering (NBIB),* Development and Launch of an Interoperable and Curated Nanomaterial Registry, Principal Investigator: Michele L. Ostraat, PhD.
- 2009 – 2011 Project Advisory Committee, WateReuse Foundation/ Kennedy/Jenks Consultants, WRF 09-07: Risk Assessment Study of PPCPs in Recycled Water to Support Public Review.
- 2009 Peer Review Panel Member for the National Institute for Occupational Safety and Health (NIOSH) Intramural Proposal "International Coordination of Nanoscale Reference Materials" for the Nanotechnology Research Center (NTRC).
- 2008 – 2011 Project Advisory Committee, WateReuse Foundation, WRF 06-019: Monitoring for Microconstituents in an Advanced Wastewater Treatment (AWT) Facility and Modeling Discharge of Reclaimed Water to Surface Canals for Indirect Potable Use, Florida, USA
- 2008 – 2012 Advisory Board Member, Center for Risk Communication Research, University of Maryland, College Park, MD, USA
- 2007 – 2010 International Advisory Board, USA, International Symposium on Nanotechnology in Environmental Protection and Pollution, Fort Lauderdale, FL, USA

- 2007 – present Chair and US Delegate on the International Organization for Standardization (ISO) Technical Committee (TC) 229, Nanotechnologies, leading the U.S. Technical Advisory Group (TAG) Working Group 3; Environmental and Occupational Health. This work group develops a comprehensive technical and standards for engineered nano-objects.
- 2006 – 2008 Counselor to the Regional Central States Chapter of the Society of Toxicology (CS-SOT).
- 2006 Stakeholder Advisory Committee Member, to review Development of Indicators and Surrogates for Chemical Contaminant Removal During Wastewater Treatment and Reclamation, WateReuse Foundation Project WRF-03-014. May 16-17, in Phoenix, Arizona.
- 2002 Odors and Toxic Air Emissions Conference Program Committee Member. New Mexico, Rocky Mountain Water Environment Association, Air and Waste Management Association, and the International Water Association.
- 2000 – 2008 Member, Board of Advisors, Good Company. Eugene, OR.

COMMUNITY SERVICE

- Panelist, Lakeside School Annual Biology Assessment Program. Seattle, WA (2001).
- Member & Co-Director, Mayor's Small Business Task Force. Seattle, WA (1997-2001).
- Member, Sustainable Seattle: a voluntary network and civic forum for sustainability. Seattle, WA (1992-1993).

SELECTED PROFESSIONAL PRESENTATIONS

2022 **Pleus R.C.** Invited Speaker for the "IATA Aviation Health Conference." The International Air Transport Association, Paris, France, September 20-21

2021 **Pleus R.C.** Invited Expert for the "IATA Aviation Health Conference." The International Air Transport Association, Remote presentation, September 24-25

2020 **Pleus R.C.** Speaker on "Emerging Technology Trends: Nanotechnology." ANSI Company Member Forum. Hosted remotely, June 9.

2019 **Pleus R.C.** Invited Expert for the "IATA Aviation Health Conference." The International Air Transport Association, London, England, September 24-25.

2015 **Pleus R.C.** Physical-Chemical Properties: Relevance to Toxicity Testing. Presented at the Nanotechnology Regulatory Information Sessions: Regulatory Perspectives of Nanomaterial Physical-Chemical Properties. Health Canada, Ottawa, Ontario, March 13.

2013 **Pleus R.C.** Speaker on "The Nanosafety Consortium for Carbon" session of the "3rd USAF ASC/AFRL Engineered Nanomaterials Environment, Safety, and Health Workshop." January 10-12.

2013 **Pleus R.C.** Guidance on Physicochemical Characterization for Manufactured Nano-Objects Submitted for Toxicological Testing: ISO TC-229 Project Work. Presented at the NIEHS Nano Exposure/Character Workshop. Research Triangle Park, NC, January 10.

2012 **Pleus R.C.** Innovative Nano-toxicological Risk Assessment Process for Regulatory Purposes. Presented at the 40th Annual ISEES Conference. Tel Aviv, Israel, October 16-18.

2012 **Pleus R.C.** Brief Examination of the Current Toxicology Research for Carbon Nanotubes (CNTs). Presented to the Nanotubes Empowerment Solutions Consortium. Tel Aviv, Israel, October 15.

2012 **Pleus R.C.** Chemicals, Bleed Air, and Health Effects: What the Science Says. Presented at Aviation Health Conference 2012. London, United Kingdom, October 2-3, 2012.

2011 **Pleus R.C.** Comparing the Toxicology of Conventional Chemicals to Nano-Objects. Presented at the Escuela de Ingeniería Electrónica, Instituto Tecnológico de Costa Rica. San José, Costa Rica, February 2.

2010 **Pleus R.C.** Nanomaterials – Understanding and Managing ESOH Risks. Presented at the 8th Annual NanoTechnology for Defense Conference (NT4D). Atlanta, GA, May 3-6, 2010.

2010 **Pleus R.C.** The Importance of Defining Chemical and Physical Parameters for Toxicological Testing of Nanomaterials: Getting Two Scientific Groups to Help Each Other. Presented at the Bureau International des Poids et Mesures (BIPM) Workshop on Metrology at the Nanoscale. Sevres, France, February 18-19.

2009 **Pleus R.C.** Global Standardization: ISO TC 229. Nanotechnology Symposium California Department of Toxic Substances Control (DTSC). Sacramento, CA, November 16.

2009 **Pleus R.C.** Nanomaterials: Steps to Address EHS Concerns That Businesses Should Consider Before Placing Nanomaterials on the Market. Nanotech in the Marketplace Webinar. Nanotechnology Today: A Web Series. June 4.

2009 **Pleus R.C.** Hexavalent Chromium and Mercury in the Cement Industry – Recent Concerns About Human Health Issues. Presented at the 2009 IEEE-IAS/PCA 51st Cement Industry Technical Conference. Palm Springs, CA, June 2.

2009 **Pleus R.C.** Pharmaceuticals & Endocrine Disrupting Chemicals (EDCs) in Water: Development of Health Risk-Based Screening Levels. Presented at the Water Quality Committee Program 2009 ACWA Spring Conference. Sacramento, CA, May 19-22.

2009 **Pleus R.C.** EHS: Policy, Regulation & Product Safety. Presented at the Nano Science and Technology Institute (NSTI) 2009 Products and Liability Panel. Houston, TX, May 5.

2009 **Pleus R.C.** Environmental Health & Safety and Nanotechnology: Possible Issues in the Water Industry. Presented at the Washington Innovation Summit 2009. Bellevue, WA, April 9.

2009 **Pleus R.C.** Perchlorate, Pharmaceuticals and Personal Care Products, Endocrine Disrupting Chemicals, and Nanotechnology in Water. Presented for the Association of California Water Agencies (ACWA). Sacramento, CA, February 9.

2008 **Pleus R.C.**, Walker, N., and Canady, R. A Minimal Set of Characterization Parameters. Presented at the Ensuring Appropriate Material Characterization in Nano-Toxicity Studies: A Workshop, Washington, D.C., October 28.

2008 **Pleus R.C.** What We Are Learning About Micro Constituents in Drinking Water: Pharmaceuticals and Endocrine Disruptors. Presented at the 2008 Water Quality and Regulatory Conference, Ontario, CA, October 16.

2008 **Pleus R.C.** Pharmaceuticals, Endocrine Disrupting Chemicals (EDCs), and Personal Care Products (PCPs) in Untreated and Treated Drinking Water: What We Know So Far. Presented at the AWWA / PNWS sponsored seminar, Pharmaceuticals in Water and Wastewater, Hillsboro, OR, September 11.

2008 **Pleus R.C.** Nanotechnology: Risk, Health, and Environmental Perspectives: Toxicology and Nano-objects. Boeing, Seattle, WA, July 25.

2008 **Pleus R.C.** Endocrine Disrupting Compounds (EDCs) and Pharmaceuticals and Personal Care Products (PPCPs). AWWA Webcast, May 7.

2008 **Pleus R.C.** Toxicology of Endocrine Disruptors (EDCs): Excerpts from *Toxicological Relevance of Endocrine Disruptors and Pharmaceuticals in Drinking Water, project #3085*. Presented at the EDC Communication - AwwaRF Research On EDC's and Risk Communication for D.C. Region Stakeholders, Washington, D.C., April 11.

2008 **Pleus R.C.** Toxicological Relevance of Endocrine Disrupting Chemicals (EDCs) and Pharmaceuticals in Water. AwwaRF Project #3085 / WRF 04-003. AwwaRF Webcast, March 6.

2008 **Pleus R.C.** Strategy Used to Build Toxicological Database for Emerging Toxic Chemicals in Litigation Focusing on the Mechanism of Action—Yes, This Is Rocket Science! Presented at the DRI Conference, Phoenix, AZ, February 6, 2008.

2007 Linkov I., Peterson M.K., Corey L.M., and **Pleus R.C.** Assessing Environmental Risk of Nanomaterials: Approaches and Tools. 2007 NSTI Nanotechnology Conference and Trade Show, Santa Clara, CA, May 20-24.

2007 Snyder E.M., Bruce G.M., **Pleus R.C**., and Snyder S.A. Incidence and Toxicological Significance of Selected Endocrine Disrupting Chemicals (EDCs) in Drinking Water. Presented at the World Environmental and Water Resources Congress 2007, Tampa, FL, May 15-19.

2006 Snyder S.A., **Pleus R.C.** Human Health Implications from Nanoparticles in Water. Presented at The2nd International Symposium on Environmental Nanotechnology, South Korea, November 3.

2006 **Pleus R.C**., Snyder S.A. Risk Assessment of Pharmaceuticals and Endocrine Disruptors in Drinking Water. Presented at The Western Coalition of Arid States Conference, Tucson, AZ, November 2.

2006 **Pleus R.C**., Snyder S.A. Toxicological Relevance of Pharmaceuticals and Endocrine Disruptors in Drinking Water. Presented to the Orange County Utilities; Water Quality Section Conference, Orlando, FL, October 26.

2006 Linkov I., **Pleus R.C.**, Stevens J., and Ferguson E. EPA Peer Review Panel Recommendations on Environmental Risk of Nanomaterials & Multi-Criteria Decision Analysis and Environmental Risk Assessment for Nanomaterials. Presented at the US Army Nanotechnology Development Coordination Meeting, Cambridge, MA, August 15-17.

2006 **Pleus, R.C.** Perchlorate in 2006: Where are we and where are we going? Invited speaker. Presented at the 2006 Superfund Program Managers Symposium, Scottsdale, AZ, August 13-16.

2006 Corey L.M., Peterson M.K., **Pleus R.C**. Nanotechnology Environmental Health and Safety (EHS): Current Knowledge and Future Challenges. Presented at the 9th Annual Force Health Protection Conference, Albuquerque, NM, August 6-11.

2006 Corey L.M., Peterson M.K., **Pleus R.C**. Nanotoxicology: Special Considerations for Assessing Risks from Very Small Particles. Presented at the 9th Annual Force Health Protection Conference, Albuquerque, NM, August 6-11.

2006 Corey L.M., Peterson M.K., **Pleus R.C.** Developing Nanotechnology Health and Safety Standards. Invited speaker. Presented at the 2006 Micro Nano Breakthrough Conference, Vancouver, WA, July 25, 2006.

2006 **Pleus R.C.**, Bruce G.M., Snyder E.M., Snyder S.A., and Corey L.M. Toxicological Relevance of EDCs and Pharmaceuticals. Invited speaker. Presented at the 2006 AWWA Annual Conference in San Antonio, TX. June 11-15.

2006 **Pleus R.C.**, Bruce G.M., Snyder E.M., Snyder S.A., and Corey L.M. Incidence and Toxicological Significance of Selected Pharmaceuticals in Drinking Water. Presented at the

Groundwater Resources Association's Emerging Contaminants in Groundwater Symposium, Concord, CA. June 7-8.

2006 **Pleus R.C.,** Bruce G.M., Snyder E.M. Addressing the Significance of Trace Level Findings. Presented at the Association of California Water Agencies Groundwater/ Water Quality Track: Pharmaceuticals in Groundwater: Public Health Issue or Public Relations Nightmare? Monterey, CA. May 10.

2006 Bruce G.M., **Pleus R.C.,** Snyder S.A., and Snyder E.M. Toxicological Relevance of Pharmaceuticals and Endocrine Disrupting Chemicals in Water. Presented at the National Ground Water Association's 5th International Conference on Pharmaceuticals and Endocrine Disrupting Chemicals in Water, Costa Mesa, CA. March 14, 2006.

2005 Snyder E.M., Snyder S.A., **Pleus R.C.**, Bruce G.M., Hemming J.D.C., and Hulsey R.A. Approach for Assessing the Toxicological Relevance of Endocrine Disruptors and Pharmaceuticals in Drinking Water. Submitted to Water Quality Technology Conference and Exhibition, Quebec, Canada. November 6-10.

2005 Corey L.M.**,** Bruce G.M., **Pleus R.C.** Development of Nano-Based Risk Assessments: Challenges for the Present and Future. Mechanisms of Action of Inhaled Fibers, Particles and Nanoparticles in Lung and Cardiovascular Disease, Research Triangle Park, NC. October 25-28.

2005 **Pleus, R.C.** Perchlorate: Where We Are and Where We Are Going? Presented at the Environmental Law Conference at Yosemite, CA. October 22.

2005 **Pleus, R.C.** Emerging Chemicals of Concern-Effective Toxicological Assessment. Presented for the Society of Toxicology, Central State Chapter, Ames, IA. September 30.

2005 **Pleus, R.C.** Emerging Chemicals—Health Concerns About Endocrine Disruptors & Pharmaceuticals in Drinking Water Supplies. Presented at Mealey's Water Contamination Conference in Los Angeles, CA. September 26-27.

2005 **Pleus R.C.** Methods to Derive Safe Drinking Water Levels for Chemicals in Drinking Water. Invited to present at the 2005 Annual Conference & Exposition of the American Water Works Association: Natural Poisons & Unnatural Products Session, San Francisco, CA. June 14.

2005 Bruce G.M. and **Pleus R.C.** Private Toxicology: Testing and Analysis. Invited to present at the Winning: Hot Topics in Criminal Law—Alternatives to the State Crime Lab, Seattle, WA. May 24.

2005 Bruce G.M., Peterson M.K., and **Pleus R.C.** Comparative Risk Assessment Of Multimedia Environmental Exposure To Perchlorate and Other Agents That Inhibit Iodide Uptake Into The Thyroid. Poster presented at the Society of Toxicology 44th Annual Meeting, New Orleans, LA. March 10.

2005 Peterson M.K., **Pleus R.C.,** and Hays S.M. Assessing the Risks Associated with Children Ingesting Lead in School Drinking Water: PBPK Modeling and Risk Communication. Poster presented at the Society of Toxicology 44th Annual Meeting, New Orleans, LA. March 8.

2005 Dodge D.G., Peterson M.K., and **Pleus R.C.** Addressing Toxicological Challenges to Community Water Fluoridation in Washington State. Poster presented at the Society of Toxicology 44th Annual Meeting, New Orleans, LA. March 7.

2004 **Pleus R.C.** 2004 Update: What Do Human Data Tell Us About How Much Perchlorate Exposure is 'Safe'? Presented at the 2004 Water Quality Conference, Ontario, CA. October 26-28.

2004 **Pleus R.C.** Perchlorate dose-response relationship and the likelihood of effects at environmentally relevant levels. Presented at the URS Seminar—Perchlorate: Rush to Judgment or Serious Health Threat, Seattle, WA. September 28th.

2004 **Pleus R.C.** Research, Discovery, and Contribution: Professional Experience in the Republic of South Africa. Invited speaker. Presented at the Pacific Northwest Association of Toxicologists (PANWAT) Annual Meeting: Toxicology in Third World Settings, Bend, OR. September 19th.

2004 **Pleus R.C.** Product Liability: Emerging Contaminants of Concern. Presented to Bullivant Houser Bailey, Seattle, WA and their satellite offices via video-conference. September 2.

2004 **Pleus R.C.** Perchlorate dose-response relationship and the likelihood of effects at environmentally relevant levels. Presented at the 228th ACS National Meeting, Philadelphia, PA. August 22-26.

2004 **Pleus R.C.** and Bruce G.M. Where Are We Now? An Update on the Perchlorate Action Level Debate. Presented at the 7th Annual Force Health Protection Conference, Albuquerque, NM. August 8-12.

2004 Belzer R.B., **Pleus R.C.,** Bruce G.M., and Peterson M.K. Using Comparative Exposure Analysis to Validate Low-Dose Human Health Risk Assessment: The Case of Perchlorate. Presented at the 7th Annual Force Health Protection Conference, Albuquerque, NM. August 8-12.

2004 **Pleus R.C.** and Bruce G.M. Perchlorate dose-response relationship and the likelihood of effects at environmentally relevant levels. Presented at the Groundwater Resources Association of California Conference, Glendale, CA. August 4th.

2004 **Pleus R.C.** Asthma and Fungi: State of the Science. Presented at the ASTM International Boulder Conference on Mold in the Indoor Environment: Assessment, Health and Physical Effects, and Remediation, University of Colorado at Boulder, Boulder, CO. July 25-30.

2004 **Pleus R.C.**, Bruce G.M., Peterson M.K., and Dodge D.G. Comparative Contribution of Perchlorate and Anti-Thyroid Agents in American Diets to Iodide Uptake Inhibition. Paper presented at the 32nd Propellant Development & Characterization Subcommittee (PDCS) and the 21st Safety & Environmental Protection Subcommittee (S&EPS) Joint Meeting, Seattle, WA, July 25-29.

2004 **Pleus R.C.** Perchlorate dose-response relationship: Evidence from human studies. Presented at the 227th American Chemical Society National Meeting, Anaheim, CA. April 1.

2004 **Pleus R.C.** Establishing a Safe Dose for Perchlorate Based on Human Evidence of a No Effect Level. Presented at the Society of Toxicology 43rd Annual Meeting, Baltimore, MD. March 24.

2004 Peterson M.K. and **Pleus R.C.** Comparative Analysis of Neuropsychological Toxicity of Biological, Chemical, and Pharmaceutical Agents. Presented at the Society of Toxicology Annual Meeting, Baltimore, MD. March 22.

2004 **Pleus R.C.** Perchlorate: The Greer Study, the Critical Animal Studies, and the Process of Evaluation by the National Academy of Science. Presented at the 14th Annual West Coast Conference on Soils, Sediments, and Water, San Diego, CA. March 16.

2004 **Pleus R.C.** and Bruce G.M. Adverse Effect Levels for Neurodevelopmental Effects Associated with Maternal Perchlorate Exposure: What do Existing Data Indicate? Presented at the 21st International Neurotoxicology Conference, Honolulu, Hawaii. February 12.

2003 **Pleus R.C.** Considerations related to sampling for bioterrorism agents. Presented at the Society for Risk Analysis Meeting—Bridging Risk Divides: Risk Assessment and Risk

Communications Methodologies for Bioterrorism Incident Response Symposia, Baltimore, MD. December 8.

2003 **Pleus R.C.** A Review of the Science Required to Establish an Informed MCL for Perchlorate in Drinking Water. Presented to the Perchlorate Review Scholars Committee Urban Water Research Center, University of California, Irvine, CA. October 21.

2003 **Pleus R.C.** Perchlorate: The Questions You Have and The Answers You Need Presented at Fresh Summit 2003: Produce Marketing Association's 54th International Convention & Exposition, Orlando, FL. October 19.

2003 **Pleus R.C.** What do we know about the neurotoxic effects of chemicals in aircraft cabin air? Presented at the Northwest Occupational Health Conference Pacific Northwest Section of the American Industrial Hygiene Association, Seattle, WA. October 16.

2003 **Pleus R.C.** The Greer Study: Discussion of the Key Points. Presented at the UNMC Perchlorate State-of-the-Science Symposium, Omaha, NE. September 30.

2003 **Pleus R.C.** Making Sense of the Perchlorate Action Level Debate. Presented at the 6th Annual Force Health Protection Conference, Albuquerque, NM. August 11-14.

2003 **Pleus R.C.** Quantifying the Effects of Perchlorate. Presented at the California Minor Crops Council Technical Committee Meeting, Irvine, CA. June 26.

2003 **Pleus R.C.**, Bruce G.M., and Peterson M.K. Assessing Neurodevelopmental Effects of Environmental Exposures to Anti-Thyroid Agents: How Relevant are High Dose Rat Studies? Presented at the Society of Toxicology 42nd Annual Meeting, Salt Lake City, UT. March 9-13.

2003 Bruce G.M., **Pleus R.C.,** and Peterson M.K. Dose-Response Investigation of Tricresyl Phosphates Potentially Present in Airplane Cabin Air from Jet Engine Oils. Presented at the Society of Toxicology 42nd Annual Meeting, Salt Lake City, UT. March 9-13.

2003 **Pleus R.C.** Invited as Expert Panelist and presented, Making Sense of the Perchlorate Action Level Debate at AFCEE Technology Transfer Workshop, San Antonio, TX. February 24-27.

2003 **Pleus R.C.** Making Sense of the Perchlorate Action Level Debate. Presented at the 22nd Meeting of the RCC – Environmental Group AFCEE, San Francisco, CA. February 11-13.

2003 **Pleus R.C.** Dose-Response Investigation of Tricresyl Phosphates Potentially Present in Airplane Cabin Air from Jet Engine Oils. Presented at the 20th Annual International Aircraft Cabin Safety Symposium. Universal City, CA. February 10-13.

2002 Belzer R.B., Johnson D., Peterson M.K., and **Pleus R.C.** Comparative Risk Assessment for Perchlorate: How does the US EPA's RfD Compare to Other Goitrogens that are Found in the US Diet. Presented at the Society for Risk Analysis Annual Meeting: Symposium on Perchlorate: Policy Implications, New Orleans, LA, December 8-11.

2002 **Pleus R.C.** and Bruce G.M. Assessing Developmental Neurotoxicity for Environmental Chemicals. Presented at the Society for Risk Analysis Annual Meeting Symposium on Perchlorate: Policy Implications, New Orleans, LA, December 8-11.

2002 Peterson M.K., Bruce G.M., and **Pleus R.C.** Implications for the Use of Thyroid Endpoints from Rat Reproductive/Developmental Toxicity Studies in Human Risk Assessment. Presented at the Society for Risk Analysis Annual Meeting Symposium on Perchlorate: Policy Implications, New Orleans, LA, December 8-11.

2002 **Pleus R.C.** Making Sense of the Perchlorate Action Level Debate. Presented at the SERDP Partners in Environmental Technology Technical Symposium & Workshop, Washington, D.C. December 5.

2002 **Pleus R.C.** What Do Human Data Tell Us About How Much Perchlorate Exposure is 'Safe'? Presented at the Perchlorate Conference, Ontario, CA, October 16.

2002 Bruce G.M., Peterson M.K., and **Pleus R.C.** Sequence of Neurodevelopmental Effects of Anti-thyroid Agents in Rat Offspring: What Should We Expect to See? Poster presented at the NIEHS Thyroid Hormone & Brain Development Conference, Research Triangle Park, NC, September 23-25.

2002 Wahlsten D., Colbourne F., and **Pleus R.C.** High throughput rat and mouse brain morphometry for toxicology research. Poster presented at the NIEHS Thyroid Hormone & Brain Development Conference, Research Triangle Park, NC, September 23-25.

2002 Belzer R.B., Bruce G.M., Peterson M.K., and **Pleus R.C.** Exposure to Anti-thyroid Chemicals in the Environment and Diet. Poster presented at the NIEHS Thyroid Hormone & Brain Development Conference, Research Triangle Park, NC, September 23-25.

2002 **Pleus R.C.** Understanding Mold-Related Health Effects. Presented at the Emerging Environmental Issues Workshop Environmental Issues In Transactions: The New Landscape & Mold: Why a Headline Now? Sidley Austin Brown & Wood, Chicago, IL, June 7.

2002 **Pleus R.C**. with Boss, et al. Decommissioning – Biological Risk course: Risk Assessment and Risk Communication: Strategic Tools. Presented at the American Industrial Hygiene Conference & Exposition, San Diego, CA, June 1-2.

2002 Peterson M.K., Bruce G.M., and **Pleus R.C.** Identification and Risk Assessment of Odorous Chemicals Associated with Combustion Processes. Poster presented at the Air & Waste Management Association's Hazardous Waste Combustors Specialty Conference & Exhibition, St. Louis, MO, April 17-19.

2002 **Pleus R.C.** The Toxicology of Terror and Tragedy. Presented at the Western Washington Emergency Network Conference, Bellevue, WA, April 2-3.

2002 **Pleus R.C.** Understanding Mold-Related Health Effects. Presented at the Mold Mania! A Growing Concern for the Insurance Industry seminar, Pacific Northwest Chapter of the CPCU Society, Seattle, WA, March 13.

2002 Bruce G.M., Johnson D. and **Pleus R.C.** Assessment of the Validity of US EPA's Interpretation of an Effect of Altered Neurobehavior in Offspring Treated with Perchlorate *in utero*: A Critical Review of the Argus (1998) and Bekkedal *et al*. (2000) Studies. Submitted to Eastern Research Group, Inc. for the US EPA/ORD Peer Review Workshop-Perchlorate Environmental Contamination: Toxicological Review and Risk Characterization, March 5-6, Sacramento, CA. February 19.

2002 Bruce G., Peterson M.K., Lincoln D.L., and **Pleus R.C.** Review and assessment of TSH and Thyroid Hormones during Pregnancy in the Rat and Human and Comparison to Hormone Values in the 2001 Effects Study. Submitted to Eastern Research Group, Inc. for the US EPA/ORD Peer Review Workshop-Perchlorate Environmental Contamination: Toxicological Review and Risk Characterization, March 5-6, Sacramento, CA. February 19.

2002 Bruce G. and **Pleus R.C.** Summary of the Expert Review of the Argus, 2001 ("Effects Study") Evaluation of Perchlorate Effects on Brain Morphometry in Neonatal Rats. Submitted to Eastern Research Group, Inc. for the US EPA/ORD Peer Review Workshop-Perchlorate Environmental Contamination: Toxicological Review and Risk Characterization. March 5-6, Sacramento, CA. February 19.

2002 INTERTOX, INC. Summary of the 1999 External Peer Review Panel Workshop, Submitted to Eastern Research Group, Inc. for the US EPA/ORD Peer Review Workshop-Perchlorate

Environmental Contamination: Toxicological Review and Risk Characterization. March 5-6, Sacramento, CA. February 19.

2002 Johnson D. and **Pleus R.C.** Assessment of Neuropsychological Studies by Haddow et al. (1999) and Others Cited By US EPA to Support Their Concerns for Developmental Deficits Related to Maternal Thyroid Deficiency. Submitted to Eastern Research Group, Inc. for the US EPA/ORD Peer Review Workshop-Perchlorate Environmental Contamination: Toxicological Review and Risk Characterization. March 5-6, Sacramento, CA. February 19.

2001 **Pleus R.C.** Mercury Toxicology: Managing for Mercury in the Waste Stream. Presented at The WA State Recycling Association Workshop: Managing for Mercury in the Recycling Stream, Olympia, WA, November 16.

2001 Peterson M.K., Bruce G.M., Johnson D.L., and **Pleus R.C.** Evaluation of Risks and Health Effects in Humans Exposed to the Herbicide Dinoseb: A Case Study. Poster presented at the 2001 Society for Risk Analysis Annual Meeting, Seattle, WA, December 2-5.

2001 Goodman G. and **Pleus R.C.** Report on Six Expert Reviews of the Levy Report (J. Levy, J.D. Spengler, D. Hlinka, and D. Sullivan, Estimated Public Health Impacts of Criteria Pollutant Air Emissions from the Salem Harbor and Brayton Point Power Plants, May 2000). Prepared for USGen New England, Inc., Boston, MA. August 4.

2001 **Pleus R.C.**, Goodman G. and Mattie D.R. Development of a Reference Dose for Perchlorate: Current Issues and Status. Paper presented at 50th JANNAF (Joint Army-Navy-NASA-Air Force) Propulsion Meeting, Salt Lake City, UT, July 12.

2001 **Pleus R.C.** and Bruce G. Report on Five Expert Reviews of the Primedica 2001 Study Report (Hormone, Thyroid and Neurohistological Effects of Oral (Drinking Water) Exposure to Ammonium Perchlorate in Pregnant and Lactating Rats and in Fetuses and Nursing Pups Exposed to Ammonium Perchlorate During Gestation or via Maternal Milk, March 2001). Prepared for the Perchlorate Study Group. May 16.

2000 Greer M.A., Goodman G., **Pleus R.C.** and Greer S. Does Environmental Perchlorate Exposure Alter Human Thyroid Function? Determination of the Dose-Response for Inhibition of Radioiodine Uptake. Paper presented at the International Thyroid Meeting, Kyoto, Japan, October 22-27.

2000 Greer M.A., Goodman G., **Pleus R.C.** and Greer S.E. Dose-Response for Perchlorate Effects on Thyroid Function in Human Subjects: Assessment of Environmental Risks. Submitted to US EPA. June 30.

2000 **Pleus R.C.** and Fulton K. Risk Assessment and Risk Communication: Strategic Tools. Course presented at the Air & Waste Management Association 93rd Annual Conference, Salt Lake City, UT, June 18-22.

2000 **Pleus R.C.**, Goodman G., and Mattie D.R. Development of a Reference Dose for Perchlorate: Current Issues and Status. Paper presented at the JANNAF Propellant Development & Characterization Subcommittee and 18th Safety & Environmental Protection Subcommittee Joint Meeting, NASA Kennedy Space Center, FL, May 11.

1998 Goodman G. and **Pleus R.C.** Recommendations to the US EPA concerning the derivation of a reference dose for perchlorate. Prepared for the American Pacific Corporation, Submitted to the National Center for Environmental Assessment. Research Triangle Park, NC. September.

1998 Rogers D.E.C., Terblanche P., and **Pleus R.C.** Health risk assessment: its introduction to South Africa for the regulation of emissions from medical waste incinerators. Presented at the *Papers of 11th World Clean Air and Environmental Congress, Volume 3*. Durban, South Africa.

1998 **Pleus R.C.** Risk Assessment and Risk Communication: Strategic Tools. Course presented at the Air & Waste Management Association Waste Combustion in Boilers and Industrial Furnaces Specialty Conference, Kansas City, MO, April 14.

1998 Johnson D.L. and **Pleus R.C.** Current Issues that Effect the Estimate of Cancer Risks and Noncancer Hazards in Multipathway Risk Assessments for BIF Facilities. Paper presented at the Air & Waste Management Association Waste Combustion in Boilers and Industrial Furnaces Specialty Conference, Kansas City, MO, April 15-16.

1998 **Pleus R.C.** and Johnson D.L. Assessing the Risks and Costs to Environmental Cases: Case Studies of Management Responses to Community Discontent. Paper presented at the Air & Waste Management Association Waste Combustion in Boilers and Industrial Furnaces Specialty Conference, Kansas City, MO, April 15-16.

1998 **Pleus R.C.**, Dunn L. and Rogers D.E.C. Comparison of the Use of Risk Assessment for Human Health and Ecological Assessments in Developed and Developing Countries. Paper presented at the 11th World Clean Air and Environment Congress, Durban, South Africa, September 13-18.

1997 **Pleus R.C.** and Boss M.J. Risk Assessment and Risk Communication: Strategic Tools. Course presented at the Air & Waste Management Association Waste Combustion in Boilers and Industrial Furnaces Specialty Conference, St. Louis, MO, April 7.

1997 Shirai J., **Pleus R.C.** and Perry M. Chemical Characteristics of Cement Kiln Dust and their Effect on Dioxin-Related Health Risks. Paper presented at the Air & Waste Management Association Waste Combustion in Boilers and Industrial Furnaces Specialty Conference, St. Louis, MO, April 8-10.

1997 **Pleus R.C.** Introduction to Risk Assessment and Risk Communication: Training Course I. Course presented at the Council on Scientific and Industrial Research (CSIR), Pretoria, South Africa, March 3.

1997 **Pleus R.C.** International Trend in Health Risk Assessment. Lecture to South African governmental officials, CSIR Boardroom, Building 46, Pretoria, South Africa, March 11.

1997 Perry M. and **Pleus R.C.** What are the Neighbors Smelling? Odor Investigation of a Portland Cement Plant. Paper presented at the Nevada Water Pollution Control Association Annual Conference, Las Vegas, NV, March 7.

1997 Perry M. and **Pleus R.C.** Managing Corporate and Citizen Response to Foul Odors: Case Studies Involving Commercial Disposal and Production Facilities. Paper presented at the Air & Waste Management Association Annual Meeting, Toronto, Canada, June 8-13.

1996 **Pleus R.C.** Risk Assessment and Risk Communication: Strategic Tools. Course presented at the Air & Waste Management Association Waste Combustion in Boilers and Industrial Furnaces Specialty Conference, Kansas City, MO, March 25.

1996 **Pleus R.C.** and Boss M.J. Risk Assessment, Risk Communication, and Risk Management: Strategic Tools. Course presented at the Air & Waste Management Association Clean Air Conference, Orlando, FL, November 19.

1995 **Pleus R.C.** Risk Assessment and Risk Communication: Strategic Tools. Course presented at the Air & Waste Management Association Waste Combustion in Boilers and Industrial Furnaces Specialty Conference, Kansas City, MO, March 27.

1995 **Pleus R.C.** and Minter S.L. Odor Investigation of a Portland Cement Plant. Paper presented at the Air and Waste Management Association Odors: Indoor and Environmental Air International Specialty Conference, Bloomington, MN, September 13-15.

1995 Brankovan V., **Pleus R.C.,** and Molholt B. A Reference Dose Concentration (Rfd) for Lithium. Paper presented at the Vth COMTOX Symposium on Toxicology and Clinical Chemistry of Metals, Vancouver, British Columbia, Canada, July 10-13.

1995 **Pleus R.C.** and Kelly K.E. Health Effects of Hazardous Waste Incineration Facilities…More of the Rest of the Story; An Updated Review of the Scientific Basis of Alleged Adverse Health Effects of Hazardous Waste Incineration. Paper presented at the Incineration Conference, Bellevue, WA, June.

1994 Kelly K.E. and **Pleus R.C.** Health effects of hazardous waste incineration...more of the story. Paper presented at Incineration Conference, Houston, TX, May.

1994 Kelly K.E. and **Pleus R.C.** Health effects of hazardous waste incineration. Paper presented at the Medichem Conference, Melbourne, Australia, October 18-21.

1993 Kelly K.E. and **Pleus R.C.** Identifying the species of metal air toxics of greatest concern to human health and the environment. Paper presented at the Air & Waste Management Association Current Issues in Air Toxics Conference, Sacramento, CA, November 15-16.

1993 **Pleus R.C.** and Kelly K.E. Health effects of burning hazardous waste in hazardous waste incinerators: US and international experience. Paper presented at the International Congress on Health Effects of Hazardous Waste, Health and Human Services, Atlanta, GA, May 3-6.

1993 **Pleus R.C.** and Kelly K.E. Health effects of burning hazardous waste in cement kilns. Paper presented at the International Congress on Health Effects of Hazardous Waste, Health and Human Services, Atlanta, GA, May 3-6.

1993 **Pleus R.C.** and Kelly K.E. The health effects of burning hazardous waste in cement kilns in the US. Paper presented at the Spalování, nebezpecnych odpadu v cementárnách, Brno, Republic of Czech, January 27.

1992 O'Rourke M.F., **Pleus R.C.**, Iversen L.J. and Bylund D.B. Pharmacologic characterization of alpha-2 adrenergic receptor heterogeneity in rat brain. Abstract. *Soc. Neurosci. Abstr.* 18: 457.

1992 Blaxall H.S., **Pleus R.C.**, Cerutis D.R., Hass N.A. and Bylund D.B. Regulation of the alpha-2C adrenergic and $5HT_{1B}$ serotonergic receptors by dexamethasone in an opossum kidney (OK) cell line. Abstract. *Soc. Neurosci. Abstr.* 18: 1538.

1992 Cerutis D., **Pleus R.C.**, Blaxall H., Hass N. and Bylund D.B. Characterization of an alpha-2 adrenergic receptor expressed in the human pineal gland. Abstract. *FASEB*, April.

1992 **Pleus R.C.**, Shiue C.Y., Shiue G.G., Rysavy J.A., Huang H., Frick M.P. and Bylund D.B. Carbon-11 labeled alpha-2 adrenergic receptor antagonist: Synthesis of [^{11}C]WY 26703 and its biodistribution in rodents. Abstract. IXth International Symposium on Radiopharmaceutical Chemistry, Paris, France, 6-10 April.

1992 Shiue C.Y., Bai L., Shiue G.G., Rysavy J.A., **Pleus R.C.**, Huang H., Frick M.P., Catt J.D. and Yevich J.P. Fluorine-18 labeled BMY 14802: Synthesis and anatomical distribution in rodents. Abstract. IXth International Symposium on Radiopharmaceutical Chemistry, Paris, France, 6-10 April.

1992 **Pleus R.C.**, Shiue C.Y., Shiue G.G., Rysavy J.A., Huang H., Frick M.P., and Bylund D.B. Comparison of [^{11}C]MK-912 and[^{11}C]WY26703 as alpha-2 adrenergic receptor ligands. Abstract. *J. Nucl. Med.* 5: 861.

1991 **Pleus R.C.** and Bylund D.B. 1991. Regulation of the $5HT_{1B}$ receptor in opossum kidney cells by serotonin. Abstract. *Soc. Neurosci. Abstr.* 17: 1175.

1991 Shiue C.Y., Shiue G.G., Bai L.Q., Huang H., Rysavy J.A., **Pleus R.C.**, Sunderland J.J. and Frick M.P. Fluorine-18 and carbon-11 labeled amphetamine analogs: Synthesis, biodistribution in mice and the effect on D-2 receptor binding. Abstract. *J. Nucl. Med.* 32: 994.

1990 **Pleus R.C.** and Bylund, D.B. 1990. Serotonin down-regulates $5HT_{1B}$ receptors in opossum kidney cells. Abstract. *Soc. Neurosci. Abstr.* 16: 495.

1988 **Pleus R.C.** and Sparber S.B. Acute toxicity of methadone, measured as hypoxia and hypercapnia, in pregnant rats. Abstract. *Soc. Neurosci. Abstr.* 14: 34.

1987 **Pleus R.C.** and Sparber S.B. 1987. Transcutaneous monitoring of O_2 and CO_2 in conscious and methadone treated rats: Underestimates of hypoxia due to physiological adaptation in control subjects. Abstract. International Narcotics Research Conference, Adelaide, South Australia, 31 August-4 September.

1986 **Pleus R.C.** Reactive astrogliosis and astrocytosis in infants who died of sudden infant death syndrome. Abstract. 7th European Conference on Brain Research, Val Thorens, France, 9-14 March.

1985 **Pleus R.C.** Chemical composition of cosmetic products. Department of Professional Development and Conferences, University of Minnesota, St. Paul, MN, Lecturer (also 1979, 1980, and 1982).

1983 **Pleus R.C.** Physiological factors contributing to accidental susceptibility. Midwest Center for Occupational Health and Safety, St. Paul Ramsey Hospital, St. Paul, MN, Lecturer (also 1981 and 1982).

PROFESSIONAL PUBLICATIONS

Chung YH, Gulumian M, **Pleus, RC**, and Yu IJ 2022. Animal welfare consideration in conducting OECD test guide-line inhalation and toxicokinetic studies for nanomaterials. Submitted. *Animals* 2022, 12, 3305. https://doi.org/10.3390/ani12233305

Lafranconi M, Budinsky R, Corey L, Klapacz J, Crissman J, LeBaron M, Golden R, **Pleus R**. A 90-day drinking water study in mice to characterize early events in the cancer mode of action of 1,4-dioxane. *Regul Toxicol Pharmacol*. 2021 Feb;119:104819. doi: 10.1016/j.yrtph.2020.104819. Epub 2020 Nov 12. PMID: 33189748.

Pleus R.C. and Corey L.M. 2018. Environmental Exposure to Perchlorate: A Review of Toxicology and Human Health. *Toxicol Applied Pharm*. pii: S0041-008X(18)30401-0.

Pleus R.C., Bruce G, Klintworth H, Sullivan D, Johnson W, Rajendran N, Keenan. 2018. Repeated dose inhalation developmental toxicity study in rats exposed to cellulose insulation with boric acid additive. *J. Inhal Toxicol.* Nov - Dec; 30(13-14):542-552.

Pleus R.C. and Murashov V. (eds.). 2018. Physico-Chemical Properties of Nanomaterials. Singapore: Pan Stanford Publishing Pte Ltd; (27 June 2018)

Corey L.M., Bell G.P., **Pleus R.C.** 2017. Exposure of the US Population to Nitrate, Thiocyanate, Perchlorate, and Iodine Based on NHANES 2005-2014. *Bull Environ Contam Toxicol* 99(1): 83-88.

Pleus, R. C. 2015. Assessing Potential Short-Term Impacts of Chloramination. Project 4320. Denver, CO: *the Water Research Foundation*.

Pleus R.C. 2013. Rethinking dose in a nano-world. *Chemistry in Australia.* May: 16-18.

Pleus R.C. 2013. Nanotoxicology: Physicochemical Properties and Good Experimental Design. *GIT Laboratory Journal* 3-4: 14-15.

Nel A.E., Nasser E., Godwin H., Avery D., Bahadori T., Bergeson L., Beryt E., Bonner J.C., Boverhof D., Carter J., Castranova V., DeShazo J.R., Hussain S.M., Kane A.B., Klaessig F., Kuempel E., Lafranconi M., Landsiedel R., Malloy T., Miller M.B., Morris J., Moss K., Oberdorster G., Pinkerton K., **Pleus R.C.**, Shatkin J.A., Thomas R., Tolaymat T., Wang A., and J. Wong. 2013. Multi-Stakeholder Perspective on the Use of Alternative Test Strategies for Nanomaterial Safety Assessment. *ACS Nano* 7(8): 6422-6433.

ISO/PDTR 13014:2012. 2012. Project Leader: **Pleus R.C.** Nanotechnologies – Guidance on Physico-Chemical Characterization for Manufactured Nano-Objects Submitted for Toxicological Testing, *International Organization for Standardization*, Geneva, Switzerland.

Bruce, G.M., Corey L.M., Mandel J.H., and **Pleus R.C.** 2012. Urinary Nitrate, Thiocyanate, and Perchlorate and Serum Thyroid Endpoints Based on NHANES 2001 to 2002. *Journal of Occupational & Environmental Medicine.* E-pub Ahead of Print.

Rogers W.S. Jr., Clark J.A., **Pleus R.C.**, Wetherington D.R., and Cowart S.T. 2010. Nanotechnology: Insurance and Risk Management Implications. *The Risk Report* 32(8): 1-8.

Snyder S., Lue-Hing C., Cotruvo J., Drewes J.E., Eaton A., **Pleus R.C.**, Schlenk D. 2010. Pharmaceuticals in the Water Environment. In association with *the National Association of Clean Water Agencies* and *the Association of Metropolitan Water Agencies*.

Bruce G.M., **Pleus R.C.**, Snyder S.A. 2009. Toxicological Relevance of Pharmaceuticals in Drinking Water. *Environmental Science & Technology* 44(14): 5619-26.

Belzer R.B., Bus J.C., Cavalieri E.L., Lewis S.C., North D.W., **Pleus R.C.** 2008. The Naphthalene State of the Science Symposium: Objectives, Organization, Structure, and Charge. *Regulatory Toxicology and Pharmacology* 51, 2; Suppl. 1: 1-5.

Snyder S.A., Vanderford B.J., Drewes J., Dickenson E., Snyder E.M., Bruce G.M., **Pleus R.C.** 2008. State of Knowledge of Endocrine Disruptors and Pharmaceuticals in Drinking Water, *Awwa Research Foundation*, Denver, CO.

Linkov I., Satterstrom F.K., Steevens J., Ferguson E., **Pleus R.C.** 2007. Multi-criteria decision analysis and environmental risk assessment for nanomaterials. *Journal of Nanoparticle Research:* 543-554.

Snyder S.A., **Pleus R.C.**, Vanderford B.J., Holady J.C. 2006. Perchlorate and chlorate in dietary supplements and flavor enhancing ingredients. *Analytica Chimica Acta* 567(1): 26–32.

Snyder E.M., **Pleus R.C.**, Snyder S.A. 2005. Pharmaceuticals and EDCs in the US water industry- an update. *Journal of the American Water Works Association* 97, 11: 32-36.

Chow J.C., Watson J.G., Savage N., Solomon C.J., Cheng Y., McMurry PH, Corey LM, Bruce GM, **Pleus RC**, Biswas P, Wu C. 2005. Critical Review: Nanoparticles and the Environment. *Air & Waste Management Association* 55: 1411-1417

Wahlsten D., Colbourne F. and **Pleus R.C.** 2003. A robust, efficient and flexible method for staining myelinated axons in blocks of brain tissue. *Journal of Neuroscience Methods* 123: 207-214.

Greer M.A., Goodman G., **Pleus R.C.** and Greer S.E. 2002. Health Effects Assessment for Environmental Perchlorate Contamination: The Dose Response for Inhibition of Thyroidal Radioiodine Uptake in Humans. *Environmental Health Perspectives.* 110: 927-937.

Pleus R.C., Goodman G. and Mattie D.R. 2000. Development of a Reference Dose for Perchlorate: Current Issues and Status. *CIPA Publication:* 698.

Greer M.A., Goodman G., **Pleus R.C.**, and Greer S.E. 2000. Does environmental perchlorate exposure alter human thyroid function? Determination of the dose-response for inhibition of radioiodine uptake. Abstract. Endocrine Journal 47 : 148.

Bylund D.B. and **Pleus R.C.** 2000. Alpha-2 adrenergic receptor binding in human pineal gland. *Pharmacology Reviews and Communications* 11: 1-10.

Shiue C., **Pleus R.C.**, Shiue G., Rysavy J.A., Sunderland J.L., Cornish K.G., Young S.D. and Bylund D.B. 1998. Synthesis and Biological Evaluation of [^{11}C]MK-912 As an Alpha-2 Adrenergic Receptor Radioligand for PET Studies. *Nuclear Medicine and Biology* 25: 127-133.

Pleus R.C., Dunn L. and Rogers D.E.C. 1998. Comparison of the use of risk assessment for human health and ecological assessments in developed and developing countries. In *Papers of 11th World Clean Air and Environmental Congress, Volume 2*. Durban, South Africa, National Association for Clean Air: 6D-5.

Pleus R.C. and Kelly K.E. 1998. Heath Effects from Hazardous Waste Incineration Facilities: Five Case Studies. *Advances in Modern Environmental Toxicology* 25: 179-192.

Shirai J., **Pleus R.C.** and Perry M. 1997. Chemical Characteristics of Cement Kiln Dust and their Effect on Dioxin-Related Health Risks. In *Waste Combustion in Boilers and Industrial Furnaces*. Pittsburgh, PA; Air & Waste Management Association: 193-205.

Pleus R.C., Shiue C.Y., Shiue G.G., Rysavy J.A., Huang H., Sunderland J.J. and Bylund D.B. 1993. Synthesis and biodistribution of the α_2-adrenergic receptor antagonist (^{11}C)WY26703: Use as a radioligand for Positron Emission Tomography. *Receptor* 2: 241-252.

Pleus, R.C., Suder D.R., and C.E. Schmidt. 1993. Methodology for assessing the health impact of gaseous emissions from a pulp mill. Paper presented at the 86th Annual Meeting of the Air and Waste Management Association, Denver, Colorado, 13-18 June. Paper 93-TA-36A.05.

Pleus R.C. and Pascoe G.A. 1993. Assessing health risks from inhalation and oral exposure to chloroform in water. Abstract. *FASEB Federation Proceedings.* 7: 3323.

Shiue C.Y., Shiue G.G., Rysavy J.A., **Pleus R.C.**, Huang H., Bai L.Q., Cornish K.C., Sunderland J.J. and M.P. Frick. 1993. Fluorine-18 and carbon-11 labeled amphetamine analogs—Synthesis, distribution, binding characteristics in mice and rats and a PET study in monkey. *Nuclear Medicine and Biology* 20: 973-981.

Shiue C.Y., Bai L.Q., Shiue G.G., Rysavy J.A., **Pleus R.C.**, Hui H., Frick M.P. and Catt J.D. 1993. Synthesis of (±)-[^{18}F]BMY 14802, its enantiomers and their anatomical distributions in rodents. *Nuclear Medicine and Biology* 20: 625-630.

Pleus R.C., Shreve P.E., Toews M.L. and Bylund D.B. 1993. Down-regulation of alpha-2 adrenoceptor subtypes. *European Journal of Pharmacology* 244: 181-185.

Shiue C.Y., Shiue G.G., **Pleus R.C.**, Rysavy J.A., Huang H., Frick M.P. and Menolascino F.J. 1992. A comparison of the utility of N-[^{11}C]methylketanserin and N-[^{11}C]methylaltanserin for mapping serotonin receptors *in vivo*. *Journal of Nuclear Medicine* 33: 1026.

Pleus R.C., Shiue C.Y., Shiue J., Rysavy J., Huang H., Sunderland J., Cornish K., Bai L., Frick M. and Bylund D.B. 1992. [^{11}C]MK-912 and [^{11}C]WY26703 as positron emitting radioligands to label alpha-2 adrenergic receptors *in vivo*: Assessing their use in Rhesus monkey brain. Abstract. *Abstracts – Society for Neuroscience* 18: 590.

Pleus R.C. and Bylund D.B. 1992. Desensitization and down-regulation of the 5-HT$_{1B}$ receptor in the opossum kidney cell line. *Journal of Pharmacology and Experimental Therapeutics* 261: 271-277.

Gary V., Oatman L., **Pleus R.C.** and Gray D. 1984. Formaldehyde in the home: Some disease perspectives. *Minnesota Medicine* 63: 107-110.

CONTRIBUTIONS TO BOOK CHAPTERS

Pleus, R.C. 2014. Toxicity Testing, Standards and Guidelines. In: Wexler, P. (Ed.), Encyclopedia of Toxicology, 3rd edition vol 4. Elsevier Inc., Academic Press, pp. 698–702.

Pleus R.C. 2012. The State of Science – Human Health, Toxicology, and Nanotechnological Risk. In Shatkin J., *Nanotechnology Health and Environmental Risks.* CRC Press.

Locascio L., Reipa V., Zook J., **Pleus R.C.** 2011. Nanomaterial Toxicity: Emerging Standards and Efforts to Support Standards Development. In Murashov V. and Howard J., Eds. Nanotechnology Standards. Springer: 179-208. New York, NY.

Belzer R.B., Bruce G.M., Peterson M.K. and **Pleus R.C.** 2004. Using Comparative Exposure Analysis to Validate Low-Dose Human Health Risk Assessment: The Case of Perchlorate. In Linkov, I. and Ramadan, A., Eds. *Comparative Risk Assessment and Environmental Decision Making.* Kluwer: 57-74. Norwell, MA.

Borak J.B. and **Pleus R.C.** 2003. Toxicology (Chapter 39). In McCunney R.J., Eds. *A Practical Approach to Occupational and Environmental Medicine, 3rd Edition*. Lippincott Williams & Wilkins Publishers: 554-570. Philadelphia, PA.

Pleus R.C. 2003. Perchlorate Regulation and Regulatory Activity (Chapter IX). In Schilt A.A. and McBride L.C., *Perchloric Acid and Perchlorate, 2nd Edition*. GFS Chemicals. Powell, OH.

Pleus R.C., Ammann H.M., Miller R.V., and Robles H. 2003. Toxicology (Chapter 4). In Boss M. and Day D., Eds. *Biological Risk Engineering Handbook: Infection Control and Decontamination*. Lewis Publishers: 97-110. Boca Raton, FL.

Ammann H.M., Miller R.V. Robles H., and **Pleus R.C.** 2003. Risk Assessment (Chapter 5). In Boss M. and Day D., Eds. *Biological Risk Engineering Handbook: Infection Control and Decontamination*. Lewis Publishers: 111-134. Boca Raton, FL.

OTHER PROFESSIONAL PUBLICATIONS

Pleus R.C. 2003. Perchlorate: Using Good Science to Derive a Safe Drinking Water Level. *Water Conditioning & Purification Magazine.* August: 36-40.

Pleus R.C. 2000. Riding the Rocket – How a Perchlorate Standard May Affect Those for Chlorine Dioxide and Its DBPs. *Water Conditioning & Purification Magazine.* September: 104-107.

Pleus R.C. 2000. Strategies to Manage POPs and PBTs in the Cement Industry. *Cement Americas.* May/June: 38-40.

Pleus R.C. and Kelly K.E. 1993. Health Effects of Hazardous Waste Incineration Facilities: Five Case Studies. *US Department of Health and Human Services. ATSDR* Hazardous Waste and Public Health: International Congress on the Health Effects of Hazardous Waste: 815-825.

Pleus R.C. 1991. Book review of Jonsen, A.: The new medicine and the old ethics. Science Books and Films 27: 71.

Pleus, R.C. 1988. Book review of Thackray, S: Looking at pollution. *Science Books and Films* 24,1: 21.

Pleus, R.C. 1988. Biology textbook review of Wallace R. A., Biology; The world of life, 4th edition. *Science Books and Films* 23, 4: 217-218.

Pleus R.C. 1985. Biology textbook review of Bauer et al. Experience in biology. 2nd edition. *Science Books and Films* 29.

Pleus R.C. 1985. Chemical composition of cosmetic products. Course notes. Minnesota Cosmetology Workshop, Minneapolis, MN.

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