

## Harvey Joseph Clewell III, Ph.D., DABT



Harvey Joseph Clewell III is a professional research manager at CIIT at The Hamner Institutes for Health Sciences, located in Research Triangle Park, North Carolina. With more than 25 years of experience in environmental quality research, toxicology research, chemical risk assessment, and hazardous materials management, Dr. Clewell has gained an international reputation for his work in the application of physiologically-based pharmacokinetic (PBPK) modeling to chemical risk assessment. Pharmacokinetics is the activity of drugs or chemicals in the body over a period of time, including the processes of absorption, distribution, localization in tissues, biotransformation and excretion. Dr. Clewell has played a major role in the first uses of PBPK modeling in cancer and non-cancer risk assessments by the United States Environmental Protection Agency (EPA), the Agency for Toxic Substances and Disease Registry (ATSDR), the Occupational Safety and Health Administration (OSHA), and the Food and Drug Administration (FDA).

At The Hamner Institutes, Dr. Clewell oversees the development of methods for combining state-of-the-art modeling of tissue dosimetry and cellular response with targeted experimental studies, in order to reduce the uncertainty in estimates of the effects of environmental chemicals and pharmaceuticals in humans. He conducts research to foster the incorporation of chemical-specific and biological information in human health and safety assessments. Dr. Clewell's physiologically-based pharmacokinetic model of methylmercury — a bioaccumulative environmental toxin — has been used to estimate undesirable exposures in women of child-bearing age in the U.S. Today EPA and FDA guidelines state that consumers, particularly pregnant women, women planning to become pregnant, nursing mothers and young children, should avoid fish with high levels of methylmercury and limit their intake of fish with moderate levels of the toxin. Besides methylmercury, other chemicals for which Dr. Clewell has developed models include: acetone, arsenic, coumarin, isopropanol, manganese, methylene chloride, retinoic acid, trichloroethylene, and vinyl chloride. During his career, he has assessed the hazards of exposure to children of items ranging from plastic teething rings to wood playground structures treated with chromated copper arsenate (CCA).

A Diplomate of the American Board of Toxicology, Dr. Clewell has authored numerous scientific publications, and he is an adjunct professor at the department of toxicology, University of Louisiana, Monroe, as well as an adjunct professor at the Center for Environmental Toxicology and Technology, Colorado State University in Fort Collins, Colorado. He has provided testimony on behalf of the U.S. Navy at the public hearings on the OSHA-proposed standard for occupational exposure to methylene chloride, and testimony on behalf of the Department of Defense at the Congressional hearings regarding hazards associated with the transport of nitrogen tetroxide propellant over the highways.

Prior to his position at The Hamner Institutes, Dr. Clewell was a principal at ENVIRON Health Sciences Institute in Ruston, La., where he consulted in quantitative safety/risk assessment, dose response assessment, and pharmacokinetics. For 20 years, Dr. Clewell was an officer in the U.S. Air Force Biomedical Science Corps. He developed a new program in hazardous material pollution prevention and provided guidance on hazardous materials issues to developers of aircraft such as the Advanced Tactical Fighter, the B-2 Advanced Technology Bomber, and the National Aerospace Plane. At one time, Dr. Clewell supervised a laboratory research staff of more than 100 Air Force and on-site contractor personnel, and he managed and programmed the expenditure of over \$5 million in funds per year, coordinating Air Force toxicology research with other Air Force, Department of Defense, and Federal agencies. He won the Harry G. Armstrong Award for Scientific Excellence from the U.S. Air Force in 1986.

Dr. Clewell earned a B.A. cum laude in chemistry in 1969 from Bradley University in Peoria, Ill, an M.A. in physical chemistry from Washington University in St. Louis, Mo. in 1971, and a Ph.D. in Toxicology from the University of Utrecht, the Netherlands, in 2007. He maintains society memberships in Phi Eta Sigma and Phi Kappa Phi Scholastic Honoraries, the Society for Risk Analysis, the Society of Toxicology and the American Chemical Society. In 2007, the Society of Toxicology recognized Dr. Clewell with the Arnold J. Lehman Award for a major contribution to chemical risk assessment through the application of physiologically-based pharmacokinetic (PBPK) modeling.