



Achievement Award Recipient

Dr Jim Woods

PANWAT is extremely pleased to honor Dr. Jim Woods as the inaugural recipient of the Toxicology Achievement Award in recognition of his scholarship, leadership, mentorship and service within the Society of Toxicology (SOT) Pacific Northwest Regional Chapter. Dr. Woods will receive this award during the PANWAT Annual meeting.

For over 40 years, Dr. Woods has conducted seminal research in the biochemistry, epidemiology, and toxicology of environmental chemicals. His research career began in the late 1960s as a graduate student in Pharmacology at the University of Washington, where his doctoral research focused on the regulation of heme biosynthesis during perinatal development in mammals. After receiving his Ph.D. degree in 1970, he pursued post-doctoral work in Pharmacology at Yale University, and then joined the Environmental Toxicology Branch at the NIEHS. There, he established a research program focusing on the effects of environmental chemicals on the regulation of porphyrin and heme biosynthesis, and, in particular, demonstrated how unique changes in urinary porphyrin excretion patterns associated with specific chemicals could be utilized as biomarkers of exposure and toxicity. Characterization of porphyrins as biomarkers of heavy metals, especially arsenic, lead and mercury, became a focus of particular interest, owing to the widespread exposure of humans to these elements in their various forms from environmental and occupational sources and their established broad-based toxicity.

Dr. Woods' basic interest in heavy metals and porphyrin metabolism as biomarkers of chemical exposure continued as the core research focus following his return to the University of Washington in 1978, where he applied this novel approach to evaluate heavy metal exposures in cohorts of human subjects including dental professionals, lead smelter workers, chloralkalai production workers and children exposed to elemental mercury from dental amalgam fillings. Additional studies conducted through the UW Superfund Program demonstrated the feasibility of porphyrin profiles as biomarkers of metal exposures in environmental species such as the nesting starling. During the next several decades, Dr. Woods continued his research focus on the molecular mechanisms of heavy metal toxicity and biomarkers of heavy metal exposure, with particular emphasis on identification of genetic polymorphisms that confer increased susceptibility to metal

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toxicity in adults and children. His most recent studies identified disordered porphyrin metabolism as a salient characteristic of autism, suggesting that genetic and/or environmental factors that impair heme synthesis may be etiologic in this disorder. His body of research, particularly into the effects from low-level exposures to heavy metals such as lead and mercury on neurodevelopment, cognitive function and behavior will continue to contribute meaningfully to the public health dialogue and debate defining safe exposure standards to these agents.

Dr. Woods has been an advisor to 29 Masters and PhD students at the University of Washington, and he has trained 9 post-doctoral fellows in his laboratory. These individuals now hold positions in academic, public health and private research institutions, including NIH, EPA, University of Ottawa, Albert Einstein University, Swedish University of Agricultural Sciences, Harvard University, and Merck Pharmaceuticals.

Dr. Woods is regularly asked to participate as an invited speaker at national and international meetings dealing with neurodevelopmental disorders, heavy metal toxicity, and biomarkers. He served on the SOT Council from 1990-92 and on the board of the American Board of Toxicology from 1994-98, including as president of the board from 1997-98. He has been a member of the editorial boards of Toxicological Sciences, Toxicology and Applied Pharmacology, Journal of Toxicology and Environmental Health and other toxicology journals. He has been a reviewer and/or contributor to numerous government documents including the National Research Council's report on the toxicity of mercury and the US Congressional Interagency Task Force on Environmental cancer and heart and lung disease.

Dr. Woods has been a leader regionally as well, having served as the founding president of PANWAT in 1984 and leader of efforts to have PANWAT established as the Pacific Northwest Chapter of the SOT the following year. In addition to his research work on heavy metal toxicity, he conducted studies on phenoxy herbicide exposures and the incidence of cancer among Western Washington herbicide users, and on the potential neurological effects of occupational aluminum exposure among potline workers in Pacific Northwest aluminum plants. He was the chairman of the advisory committee to a NOAA-NCI investigation into the carcinogenetic effects of Puget Sound Pollutants on marine and aquatic species, and has served on numerous UW committees, providing service to the DEOHS and the UW. Additionally, he served as a trustee to the Seattle Biomedical Research Institute, as Chairman of the Science Council of the Pacific Science Center, and as a Mayoral appointee to a task force evaluating PCBs from the Lake Union Steam Plant (Seattle, WA).

Currently, he is a member of the Endowment Fund Board of the SOT, an Emeritus Professor at the University of Washington, and an Adjunct Professor at Texas Tech University.