James Starr, Research Physical Scientist, in EPA's National Exposure Research Laboratory

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Area of Expertise: James' expertise and main research focus is the development and application of new methods to better understand human exposure to environmental toxicants. Currently James is conducting research to elucidate important chemical and non-chemical factors that are determinants of the post ingestion bioaccessibility of sorbed organic compounds. He also conducts research on pesticide fate and transport issues to include multi-media, multi-pathway studies to identify those physical chemical properties, pathways, and activities that represent the highest potential exposures. This information is used by the agency to determine the factors that are important in defining exposures and result in refinements of the inputs for exposure models.

Select Publications:

Li W, Morgan M, Graham S, Starr J. Measurement of pyrethroids and their environmental degradation products in fresh fruits and vegetables using a modification of the Quick Easy Cheap Effective Rugged Safe (QuEChERS) method. Talanta. 2016; 151: 42-50. doi 10.1016/j.talanta.2016.01.009.

Hughes M, Ross D, Edwards BC, Hutchison J, DeVito MJ, Starr J. Toxicokinetics of the pyrethroid insecticide bifenthrin in the rat. Published online. Xenobiotica. doi 10.3109/00498254.2015.1081710.

Ulrich E, Starr J, Slagle T. Feasibility research on alternative approaches for sampling and extraction methods in the TO-4A method for pesticides in ambient air with analysis by GC/MS and LC/MS/MS. EPA/600/R-15/039. 2015.

Starr J, Graham S, Ross D, Tornero-Velez R, Scollon E, DeVito M, Crofton K, Wolansky M, Hughes M. Environmentally relevant mixing ratios in cumulative assessments: A study of the kinetics of pyrethroids and their ester cleavage metabolites in blood and brain; and the effect of a pyrethroid mixture on the motor activity of rats. Toxicology. 2014; 320: 15-24. doi 10.1016/j.tox.2014.02.016.

Starr J, Gemma A, Graham S, Stout D. A test house study of pesticides and pesticide degradation products following an indoor application. Indoor Air. 2014. 24 (4):390-402. doi: 10.1111/ina.12093.

Starr J, Scollon E, Hughes M, Ross D, Graham S, Crofton K, Wolansky M, DeVito M, Tornero-Velez R. Environmentally relevant mixtures in cumulative assessments: an acute study of toxicokinetics and effects on motor activity in rats exposed to a mixture of pyrethroids. Toxicol Sci. 2012; 130 (2):309-318. doi: 10.1093/toxsci/kfs245.

View more research publications by James Starr.

Education:

- Ph.D., Preventive Medicine and Environmental Health, University of Iowa, 1998
- B.S., Biology, University of Iowa, 1986

Professional Experience:

- Physical Research Scientist, USEPA, NERL, 2002-present
- Post Doctoral Fellow, USEPA,NERL, 2001-2002
- Postdoctoral Fellow, Lovelace Respiratory Research Institute, Department of Toxicology, 1999-2001
- Graduate Research Assistant, University of Iowa, Department of Preventive Medicine and Environmental Health, 1991-1998