Kristin King Isaacs, Research Physical Scientist, in EPA's National Exposure Research Laboratory

Systems Exposure Division
Mailing Address

Isaacs.kristin@epa.gov

Area of Expertise: The focus of Kristin's current research is the development and evaluation of computational and stochastic human exposure and dose models for use in assessing the impacts to human health of environmental chemicals and air pollutants. Her specific research interests and responsibilities include: 1) high-throughput models of exposures to chemicals in consumer products and articles for use in prioritizing substances for further assessment 2) human activity patterns and databases for use in exposure assessment and 3) models of the potential air pollutant exposures related to climate change.

Select Publications:

Egeghy P, Sheldon L, Isaacs KK, Ozkaynak H, Goldsmith MR, Wambaugh JF, Judson RS, Buckley TJ. (2015) Advancing computational exposure science to enable exposure assessment for the 21st century. Environmental Health Perspectives. DOI:10.1289/ehp.1509748.

Isaacs KK, Glen WG, Egeghy P, Goldsmith MR, Smith L, Vallero D, Brooks R, Grulke CM, Özkaynak H. (2014) SHEDS-HT: an integrated probabilistic exposure model for prioritizing exposures to chemicals with near-field and dietary sources. Environ Sci Technol. Nov 4;48(21):12750-9.

Goldsmith MR, Grulke CM, Brooks RD, Transue TR, Tan YM, Frame A, Egeghy PP, Edwards R, Chang DT, Tornero-Velez R, Isaacs KK, Wang A, Johnson J, Holm K, Reich M, Mitchell J, Vallero DA, Phillips L, Phillips M, Wambaugh JF, Judson RS, Buckley TJ, Dary CC. (2014) Development of a consumer product ingredient database for chemical exposure screening and prioritization. Food Chem Toxicol. Mar;65:269-79.

Phillips MB, Sobus JR, George BJ, Isaacs KK, Conolly R, Tan YM. (2014) A new method for generating distributions of biomonitoring equivalents to support exposure assessment and prioritization. Regul Toxicol Pharmacol. Aug;69(3):434-42.

Breen MS, Long TC, Schultz BD, Crooks J, Breen M, Langstaff JE, Isaacs KK, Tan CM, Williams RW, Cao Y, Geller AM, Devlin RB, Batterman SA, Buckley TJ. (2014a) GPS-based microenvironment tracker (MicroTrac) model to estimate time-location of individuals for air pollution exposure assessments: model evaluation in central North Carolina. J Expo Sci Environ Epidemiol. Jul;24(4):412-20, 2014.

Breen MS, Schultz BD, Sohn MD, Long T, Langstaff J, Williams R, Isaacs KK, Meng QY, Stallings C, Smith L. (2014b) A review of air exchange rate models for air pollution exposure assessments. J Expo Sci Environ Epidemiol. Nov;24(6):555-63.

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Education:

- Ph.D., Biomedical Engineering, Vanderbilt University, 2002
- M.S., Biomedical Engineering, University of Kentucky, 1999
- B.S., Mechanical Engineering, University of Kentucky, Magna Cum Laude, 1994

Professional Experience:

- Research Physical Scientist, US EPA/ORD/National Exposure Research Laboratory/Systems Exposure Division/Integrated Exposure Modeling Branch, Research Triangle Park, NC; 2015-present
- Co-Project Lead for Rapid Exposure and Dosimetry Project within the EPA/ORD National Program for Chemical Safety and Sustainability, 2013 to present
- Research Physical Scientist, US EPA/ORD/National Exposure Research Laboratory/Human Exposure and Atmospheric Sciences Division/Exposure Modeling Research Branch, Research Triangle Park, NC; 2010-2015
- Senior Mathematician-Statistician/Environmental Project Scientist, Alion Science and Technology/ManTech Environmental Technology, Durham, NC; 2004-2010
- Postdoctoral Fellow, US EPA/ORD/National Health and Environmental Effects Research Laboratory and University of North Carolina-Chapel Hill, Department of Environmental Sciences and Engineering. Research Triangle Park, NC; 2002- 2004

Honors and Awards:

- US EPA, Bronze Medal for Commendable Service, Chemical Safety for Sustainability National Program Team, 2014
- US EPA, Exceptional/Outstanding Technical Assistance to the Regions or Program Offices, Endocrine Disruptor Screening Program Assistance Team, 2014
- US EPA, National Exposure Research Laboratory Exposure Science Excellence Award, 2014
- US EPA, Bronze Medal for Commendable Service, SHEDS-Multimedia Modeling Team, 2013
- US EPA, Exceptional/Outstanding Technical Assistance to the Regions or Program Offices, Consolidated Human Activity Database Team, 2010