

Estimating Interactions in Chemical Mixtures: Case Studies from Cancer Epidemiology



Paul S. Albert
Senior Investigator and Director
Biostatistics Branch
Division of Cancer Epidemiology and Genetics
National Cancer Institute

Estimating the interactions between mixture components is often of interest in epidemiologic studies. Motivated by studies examining the effects of chemical exposures in the development of cancer, we develop and compare different approaches for estimating interactions among components of these exposures. We develop a latent functions approach where the main and interaction effects are estimated using two separate sets of unobserved functions. We also develop a Bayesian shrinkage approach that incorporates the hierarchical principle which assumes that it is unlikely that there are interactions without the presence of corresponding main effects. These approaches are compared with Bayesian kernel machine regression (BKMR) and LASSO, two approaches currently being used for analyzing interactions in chemical mixture studies. We analyze the data from a series of NCI studies to provide insight into chemical mixture analyses.

This is joint work with Sung Duk Kim and Debamita Kundu.

Thursday, April 13, 2023, 3:30-4:30 PM Eastern

133 Rosenau Hall

Virtual using link and info below.

<https://unc.zoom.us/j/91249030964?pwd=UXloTWIHajdQbkRqd1d5TnRaMitYdz09>

Meeting ID: 912 4903 0964

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