Outline

1. Introduction
   1. Environmental mixtures
      1. Contextualize within epidemiological research
      2. Difficult b/c of high-dimensionality, collinearity, non-additivity, nonlinearity, small effect sizes, small sample sizes
   2. Interactions
      1. Synergistic, additive, antagonistic
   3. Define questions of interest
2. Humanistic perspective
3. Bayesian methods
   1. Motivation
      1. Handle interactions
         1. Math introduction of interactions
   2. Bayesian kernel machine regression
      1. Kernel machine regression
      2. Variable selection
      3. Priors
      4. Algorithm (MCMC)
      5. Tools for visualization
   3. Bayesian semiparametric regression
      1. Spline basis
      2. Variable selection
      3. Sparsity inducing prior
      4. Algorithm
      5. Inference on interactions
   4. Bayesian factor analysis?
4. Simulation
   1. Literature review
      1. Here is what has been done
   2. Methods
   3. Results
   4. Discussion
5. Application (IF TIME)
   1. Methods
   2. Results
   3. Discussion
6. Conclusion