“Novel Statistical Models: examining associations between environmental exposure and health”

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Abstract: with the advanced technology, new information and data have become available, particularly about environmental health studies, and it is critical to develop innovative methodologies to solve public health problems by utilizing such data. Dr. Baek will present novel methodologies applied in two distinctive projects; 1) Built environment factors (e.g., number of food outlets) have received attention as potential contributors to health because the built environment can constrain individual-level choices and behaviors. We proposed using distributed lag models to describe association between built environment features and health as a function of distance from locations of interest (e.g., schools). Dr. Baek will discuss its connection with traditional regression models which fit measures of the built environment within a certain distance (e.g., number of food outlets within a-mile buffer from schools). 2) The Developmental Origin of Health and Disease (DOHaD) hypothesis is an essential theoretical framework in environmental health sciences. One of its aims is to study how prenatal and early postnatal risk factors influence children's growth and developmental outcomes. We have developed a growth model to understand the “force of growth” through growth acceleration and its association with environmental toxicants. Dr. Baek will present its implementation to examine associations between prenatal exposure to BPA and phthalates and infant growth dynamics of body mass index in a birth cohort study. Dr. Baek will also discuss various ongoing and future projects in environmental health sciences.