COLLOQUIUM BY JOHN JI

TIME: 11:00-12:00 AM, TUESDAY, 20 SEP 2016

VENUE: AB 1079

Causal Thinking in Environmental Epidemiology: Lead Exposure and Brain Health

Speaker: John Ji, Senior Researcher, Harvard Business School

ABSTRACT:

Lead poisoning is considered one of the most serious and silent public health hazards. The production of lead peaked during the industrial revolution, when it was used as a gasoline additive to reduce 'knocking', in paint to increase visual pigmentation, and as solder due to its malleable and non-corrosive properties. Eliminating lead in paint and gasoline has led to a radical reduction in the prevalence of lead poisoning in the United States. However, significant sources of exposure still remain, particularly in developing countries.

Lead is a cumulative toxicant that affects multiple body systems. By virtue of being a divalent cation, lead [Pb^{2+}] substitute for the roles of calcium [Ca^{2+}] in the molecular machinery of cells. It can be measured in the bone as a biomarker for cumulative exposure, and in the blood as a biomarker for acute exposure. Young children are particularly vulnerable to the toxic effects of lead and can suffer profound and permanent adverse health effects, particularly affecting the development of the brain and nervous system. In adults, lead increases risk of high blood pressure, kidney damage, and is linked to neurodegenerative and psychiatric disorders.

BIO:

My research interest is in how environmental factors affect the human brain, nervous system, and the epidemiology of neurologic disorders. I have utilized large longitudinal and cross-sectional cohorts such as the National Health and Nutrition Examination Survey (NHANES) and the Normative Aging Study (NAS). Previously, I have worked for the China Medical Board, US Food and Drug Administration, and Harvard Center Shanghai. I hold a doctorate degree in environmental health from Harvard School of Public Health, and a bachelor's degree in neuroscience from the Johns Hopkins University.