

Victorian Centre for Biostatistics

SEMINAR

Thursday 24th May 2018

9.30am to 10.30am

Royal Children's Hospital, Vernon Collins Lecture Theatre,
HELP Centre, Level 1, 50 Flemington Rd, Parkville**Big Data in Air Pollution Epidemiology: Taking a Closer Look at
Long-term Exposure to Coarse Particulate Matter****Professor Roger D. Peng**
Johns Hopkins Bloomberg School of Public Health

Much research to date has found that exposure to ambient fine particles is associated with asthma development and morbidity, but there is little work examining the effects of long-term exposure to coarse particles on respiratory health. Because of this research gap, it is difficult for regulatory agencies to determine if air quality standards are needed for particles in this size range. We collected data from over 7.8 million children aged 5 to 20 years enrolled in the U.S. Medicaid system from 2009 to 2010 and linked them to air pollution concentrations across the country using a semi-parametric prediction model. We found that higher average coarse PM levels is associated with increased asthma prevalence and morbidity. This work demonstrates the usefulness of "big data" approaches to air pollution epidemiology in its ability to identify population-level health risks.

Roger Peng is a Professor in the Department of Biostatistics at the Johns Hopkins Bloomberg School of Public Health working in environmental biostatistics, researching the health effects of air pollution and climate change. Rogers' primary interest is statistical methods for spatial-temporal data. Roger has recently published some books on Leanpub: *Mastering Software Development in R*, *Executive Data Science*, *R Programming for Data Science* and *Exploratory Data Analysis with R*.

www.vicbiostat.org.au

VICBiostat is a Centre of Research Excellence in biostatistics initially funded by Australia's National Health & Medical Research Council (NHMRC). The Centre is a collaboration between biostatistical researchers at the Murdoch Children's Research Institute, the Department of Epidemiology & Preventive Medicine at Monash University, and the Centre for Epidemiology & Biostatistics (CEB) at The University of Melbourne.