

## Seminar on Global air pollution and health: revealing the differences in the quality of the air that we breathe

Date: June 6, 2018 (Wednesday)  
Time: 4:00pm – 5:00pm  
Venue: Rm201, 2/F, Yasumoto International Academic Park,  
The Chinese University of Hong Kong  
Speaker: Professor Gavin Shaddick  
Chair of Data Science & Statistics  
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Department of Mathematics  
University of Exeter  
Co-Director of the Exeter-CUHK Joint Centre for Environment,  
Sustainability and Resilience (ENSURE)



### Abstract

In May 2018, the World Health Organization (WHO) released new estimates of global air quality showing that air pollution levels are dangerously high in many parts of the world. Major sources of air pollution include the inefficient use of energy by households, industry, the agriculture and transport sectors, and coal-fired power plants. In some regions, sand and desert dust, waste burning, and deforestation are additional sources of air pollution. The new estimates reveal an alarming toll of 7 million deaths every year can be associated with exposure to outdoor and household air pollution, and that 90% of people worldwide breathe polluted air.

More than 4,300 cities in 108 countries are now included in WHO's ambient air quality database, with 1000 more cities than in 2016, making this the world's most comprehensive database on ambient air pollution. However, although air pollution monitoring is increasing, there remain areas for which information is not available and estimates of exposures are required for all areas. The

University of Exeter has been working with the WHO to develop models that combine information from a number of different sources to allow exposures to be estimated worldwide. By integrating measurements from ground monitoring with information from satellites, population estimates, land-use and other factors to allow us to provide estimates of air quality for every country and region, including those where there is little, or no, monitoring. This is essential for understanding the magnitude of the global risk to health.

We will present the findings from the most current analysis of the state of global air quality including an examination of global, regional and country-level exposures and health burdens. The highest ambient air pollution levels are in the Eastern Mediterranean Region and in South-East Asia, followed by low and middle-income cities in Africa and the Western Pacific. WHO air quality guidelines state that annual average levels of fine particulate matter air pollution (PM<sub>2.5</sub>) should be below 10 µg/m<sup>3</sup>. We show that there is great variability in air pollution across the world, with some areas experiencing levels that are more than 5 times higher than the guidelines.

**~All are Welcome~**