

THE EDUCATION UNIVERSITY OF HONG KONG  
FACULTY OF LIBERAL ARTS AND SOCIAL SCIENCES

**Research Output/Impact Prize for the Dean's Research Fund 2017-18**

**Brief Introduction of Awardee's  
Research Publication/Study and Future Research Development**

**Awardee (Dept):** Dr. Deng Wenjing, Assistant Professor (SES)

**Publication Title:** Environmental Management

A. *Briefly introduce your research publication/study for which you have received the prize.*

My research areas focus on three streams:

**(a) Indoor air quality including airborne bacterial in kindergartens and children health risk;**

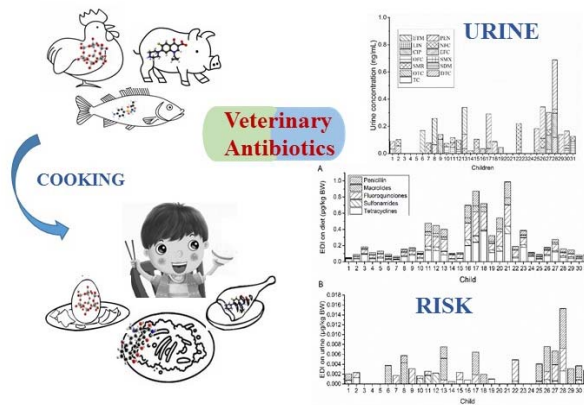
Polybrominated diphenyl ethers (PBDEs) and dechlorane plus (DP) through indoor PM<sub>2.5</sub> and dust, carbonyl compounds and black carbon aerosol were all detected in five Hong Kong kindergartens, and might present non-cancer risk and cancer risk to children. The PM<sub>2.5</sub> levels of the five kindergartens were higher, and several of them exceeded the WHO standard. Formaldehyde was the most abundant air aldehyde. Our results suggest that the majority of the inhalable bacteria were harmless to humans. Only a few microbial allergens and pathogens were identified and the concentrations were very low.

(1) **Deng, Wen-Jing\***, Zheng, Hai-Long, Tsui, KY Anita, Chen, Xun-Wen, 2016. Measurement and health risk assessment of PM<sub>2.5</sub>, carbonyls, black carbon and particulate bounded flame retardants in indoor and outdoor air of kindergartens in Hong Kong. *Environment International* 96: 65-74. (2016/2017 SCI IF: 7.088, Rank A\* Journal)

(2) **Deng, Wenjing\***, Chai Yemao, Lin, Huiying, So, Winnie WM, Ho, KWK, Tsui, AKY, Wong, RKS (2016). Distribution of bacteria in inhalable particles and its implications for health risks in kindergarten children in Hong Kong. *Atmospheric Environment* 128, 268-275. (2016/2017 SCI IF: 3.629, Rank A Journal)

**(b) Veterinary antibiotics in different environmental elements and children urine in Hong Kong;**

I found that a wide distribution of antibiotics in the main rivers of Hong Kong, and the high detection rate of antibiotics occurred where there was a high level of human activity. Then a preliminary study was done on veterinary antibiotics in drinking water, milk, and raw and cooked food and in the urine of preschool children in Hong Kong.



- (3) Li, Na, Ho, W.K. Keith, Ying, Guang-Guo, **Deng, Wen-Jing\*** (2017). Veterinary antibiotics in food, drinking water, and the urine of preschool children in Hong Kong *Environment International* 108, 246-252. (2016/2017 SCI IF: 7.088, Rank A\* Journal)
- (4) **Deng, Wenjing\***, Li, Na, Zheng, Hailong, Lin, Huiying (2016). Occurrence and risk assessment of antibiotics in river water in Hong Kong. *Ecotoxicology and Environmental Safety*, 125, 121–127. (2016/2017 SCI IF: 3.743, Rank A Journal)

**(c)E-waste and food waste management.**

The rising generation amount of electronic waste in the world has been a hotspot. Material flow analysis (MFA) has been used to investigate large annual number of end-of-life (EoL) mobile phones generated in Hong Kong. I found that the average lifespan of a mobile phone in Hong Kong was almost 23 months. Most EoL mobile phones were transferred to Mainland China for not environmentally sound or sustainable recycling. For food waste, a review of how to turn food waste into biofuel has been published.

- (5) **Deng, Wenjing\***, Giesy, John P., So, CS, Zheng, Hai-Long, 2017. End-of-life (EoL) mobile phone management in Hong Kong households. *Journal of Environmental Management* 200: 22-28. (2016/2017 SCI IF: 4.01, Rank A Journal)
- (6) **Deng, W.J.** (2016). "Turning food waste into biofuel." In "Recycling of Solid Waste for Biofuels and Bio-chemicals." Eds. Karthikeyan, O.P., Heimann, K., Muthu, S.S.. Australia, Springer (241-252). Australia: springer.

The above 3 streams, talking about updated Hong Kong environmental issues, have been published in *Environment International*, *Journal of Environmental Management*, *Atmospheric Environment*, and *Ecotoxicology and Environmental Safety*, respectively. These journals have high SCI impact factors, being ranked A\* or A, and classified to 1<sup>st</sup> quarter of Environmental Journals. All of these six outputs have received regional attention and are internationally recognized. These outputs of mine have provided the data reference of different stakeholders, such as academics, public concern, media, the government, NGO, etc.

*B. How you used/will use your prize and perhaps its usefulness to your research development?*

The prize will be used for hiring a Research Assistant, to help with sampling, lab experiments and data analysis. My research development will be based on the above 3 streams, but will be more of internationally impact.

*C. Expected research outcomes/outputs/impacts arising from this prize.*

More environmental toxins and related health impact will be examined. Two outputs will be expected arising from this prize.