

Beijing Forum 2019 Environmental Health —A Joint Event of AGU Centennial and MAIRS (I)

On the morning of November 2nd, Environmental Health—A Joint Event of AGU Centennial and MAIRS, which was also one of the sub-forums of Beijing Forum (2019), opened at Dong Xu Conference Hall, School of Economics, PKU. Over the following two days, nearly 100 scholars from China, America, UK, Canada, Israel, Singapore, Australia and Austria discussed several advanced scientific questions with respect to environmental health.

Prof. Tong Zhu, dean of the College of Environmental Sciences and Engineering at Peking University, first gave a welcoming speech. Prof. Zhu introduced the development of environmental sciences of Peking University, pointing out that the PKU team was one of the earliest teams to carry out air pollution research in China. Ever since the 1970s, the PKU team, led by Professor Xiaoyan Tang, began to pay attention to air pollution in China. Prof. Zhu finally mentioned that the development of environmental health research at Peking University was inseparable from the strong support of experts and expressed his heartfelt thanks to all of participants.

Deliang Tang, Professor of the Mailman School of Public Health at Columbia University, gave the second welcoming speech. He said that air pollution in China has been significantly improved in the past few years. Environmental health research can not only provide the basis for policy formulation at the scientific level, but also enhances the self-protection awareness and environmental protection awareness of the general public.

Gabriel M. Filippelli, a professor from Indiana University-Purdue University, continued the welcoming speech. He expressed his wish that the conference would be a success and welcomed and thanked everyone for coming. He introduced that the American Geophysical Union (AGU) is the largest earth and space science organization worldwide. AGU's journal, *GeoHealth Journal*, aims to combine cutting-edge environmental health research with geoscience and health sciences.

Wan Wei, Director of the Program Office of MAIRS, Peking University, closed the welcoming speeches. She noted that the rapid development of Asia has been accompanied by environmental problems, such as indoor and outdoor air pollution. Therefore, research on environmental health

is of great significance. In addition, the study of environmental policy is equally important. The research results of science and policy need to be translated into the real lives of the people and provide scientific guidance for policy formulation. Finally, she once again expressed her sincere gratitude to the organizers of the conference and the experts.

The keynote presentations, chaired by Prof. Tong Zhu, were then started with applause for the first speaker, Prof. Kirk Smith, who gave a speech titled "The Prospects for Exposure Management of Air Pollution: India, China, California". He first talked about exposure as the measure that is most directly related to health effects. Two-thirds of people in India still use solid fuels, and outdoor air pollution is significantly contributed by indoor sources. Also, air pollution is the second highest factor contributing to the country's disease burden, and the biomass burning of residents contributed 23.9% of India's air pollution in 2015. However, through the improvement of residential household fuel, the air quality can reach the standard. However, the situation in China has been different. China's indoor air pollution may be significantly affected by outdoor sources, and China and India need to pay more attention to indoor and outdoor air pollution research respectively to make up for the lack of understanding. Air pollution in California is another situation. Although the absolute concentration of fine particulate matter (PM_{2.5}) is low, the research results show that it still has potential health hazards. Finally, Professor Smith said that not all sources are equally important in air pollution control, and that it is necessary to focus on the most exposed sources of the human body, such as air pollution from the burning of indoor biomass in developing countries.

Fengchang Wu, vice chief engineer of the Chinese Academy of Environmental Sciences, gave the second keynote speech, titled "Preliminary research on the standard of water environment quality in China". He first talked about the importance of environmental standards, and how the development of standards can force scientific and technological progress and ecological environmental protection. Although China's environmental standards have matured, some standards for water environment still need to be improved—for example, a large amount of organic pollution is not included in China's water quality standards. In addition, seawater quality, groundwater quality, etc. require more specific and different standards. Prof. Wu went on to say that as we are facing new demands for national ecological civilization, we should pay equal attention to human health and ecological protection, and push for eco-friendly development. Finally, Prof. Wu mentioned that there are many valuable experiences abroad that we can learn from, such as

Japan's deadline for setting up standards, setting up special committees, and public participation in information disclosure. However, we still need to develop water quality standards in line with China's current situation in the management system. In the Q&A session, Prof. Wu pointed out that there are hundreds of pesticides in use in our country, but only a dozen of them entered the standard. It is a key issue to consider pesticide residues in water quality standards.

Following the in-depth discussion, the first session, titled "Epidemiologic Evidence on the Health Effects Caused by Pollution" and chaired by Michael Brauer, professor of the School of Population and Public Health of the University of British Columbia, was started. Perera Frederica, professor of the Mailman School of Public Health of Columbia University, gave the first speech, titled "Benefits to Children's Health of Reducing Air Pollution and Mitigating Climate Change". She cares about the molecular mechanisms between exposure and adverse health outcomes, and pointed out that early life is accompanied by rapid cell development, so it is important to conduct relevant research early in life. She then said that we also need to consider environmental inequities. There are currently one billion children living in poverty-stricken areas, so it is necessary to pay attention to children's health.

Following was a speech titled "On the Effects of Air Pollution on Children's Health: Modeling Advances and Key Findings" given by Kiros Berhane, professor of the Keck School of Medicine, University of Southern California. His research showed that children with low lung function are more likely to appear in highly polluted areas, and that children have become healthier on multiple indicators as air pollution has declined.

Prof. Haidong, School of Public Health, Fudan University, gave a speech on "Air Pollution and Daily Mortality: From PAPA to MCC-Air". He said that, even below the air pollution standard limits, exposures have significant adverse health effects. His team found that there are differences in the relationship between PM_{2.5} exposure and population mortality in different countries around the world, and, even below the standard limits set by the World Health Organization, the risk of death still exists.

The last speech of the morning, titled "Fe-rich Silicates in Coal Smoke and Lung Cancer in Xuan Wei, China", was given by Linwei Tian, associate professor of the School of Public Health, University of Hong Kong. Professor Tian began with an introduction to his study of Xuanwei,

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Yunnan, in the 1980s, introducing a significant relationship between the exposure of benzopyrene to lung cancer. However, as medical conditions are now developing, the incidence of lung cancer in the region is still significantly higher than the national average. He suggested that the chlorite composition of the fuel used in the region might play an important role in it.